



Sailor

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**INSTRUKTIONSBOG FOR
SAILOR T1127A/R & T1127A/M**

**INSTRUCTION BOOK FOR
SAILOR T1127A/R & 1127A/M**



A/S S. P. RADIO · AALBORG · DENMARK

CONTENTS:

GENERAL DESCRIPTION	2
TECHNICAL DATA	3
PRINCIPLE OF OPERATION	4
SERVICE:	
1. MAINTENANCE	
2. NECESSARY TEST EQUIPMENT	
3. TROUBLE-SHOOTING	
4. PERFORMANCE CHECK FOR T1127	
5. ADJUSTMENT PROCEDURE FOR T1127	
6. NECESSARY ADJUSTMENTS AFTER REPAIR FOR T1127	
7. FUNCTION CHECK FOR T1127	
8. MECHANICAL DISASSEMBLING FOR T1127	
PIN CONFIGURATIONS	
TUNING FACILITIES T1127	
ADJUSTMENT - and MECHANICAL LOCATIONS	
CIRCUIT DESCRIPTION AND SCHEMATIC DIAGRAMS	
PARTS LIST	
MAIN SCHEMATIC DIAGRAM	
INTERCONNECTION CABLE FOR SAILOR SHORT-WAVE PROGRAMME 1000	

GENERAL DESCRIPTION

INTRODUCTION

SAILOR T1127 A/M is an 1000 Watt PEP SSB transmitter.

SAILOR T1127 A/R is an 400 Watt PEP SSB transmitter.

SAILOR T1127 A is supplied from N1400 (24V DC) or N1401 (AC mains).

SAILOR T1127 A fits into SAILOR 19" rack system.

TECHNICAL DATA

Output power: 405 - 535 kHz.

1000 Watt for T1127 A/M.
400 Watt for T1127 A/R.

*målt på RF-
Terminaten*

Number of channels:)

Frequency stability:)

Mode of operation:) Dependent on the exciter in question.

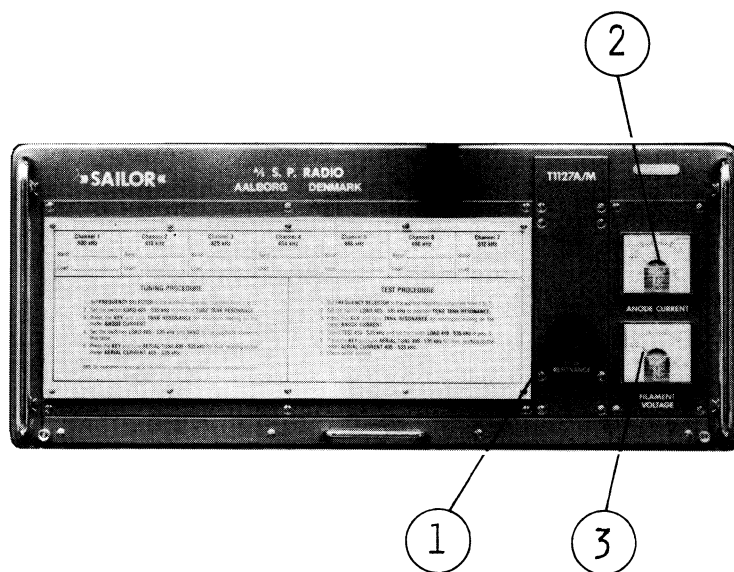
Distress call:)

Modulation:)

Temperature range: -15°C to +55°C

Power consumption: See instruction manual for power supply N1400 or N1401.

CONTROLS



1 TANK RESONANCE

After change of frequency tune the TANK RESONANCE by means of knob 1 for min. ANODE CURRENT deflection on 2 . (Press TUNE button on the exciter).

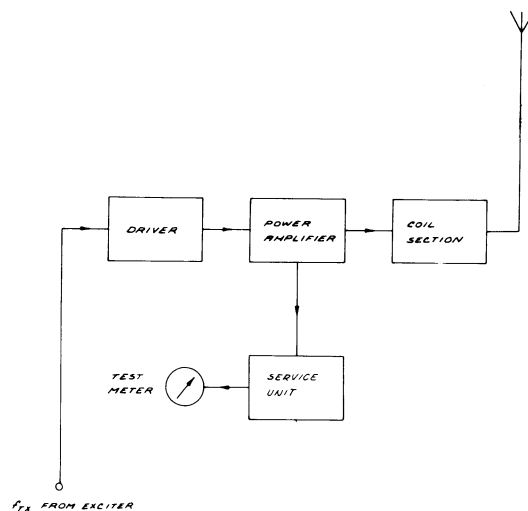
2 ANODE CURRENT

Shows the anode current in milliAmps x 10.

3 FILAMENT VOLTAGE

Shows the filament voltage to the output tubes.

PRINCIPLE OF OPERATION



TRANSMITTER T1127A

The signal from the exciter is first amplified in a transistorized wide-band DRIVER which operates in class A. The output of the driver is fed through a matching circuit to the power amplifier, which is composed of two beam power tetrodes connected in parallel and operates as an amplifier in class AB. The anodes are connected to the coil section, which consists of pi-network.

SERVICE

1. MAINTENANCE
2. NECESSARY TEST EQUIPMENT
3. TROUBLE-SHOOTING
4. PERFORMANCE CHECK
5. ADJUSTMENT PROCEDURE
6. NECESSARY ADJUSTMENTS AFTER REPAIR
7. FUNCTION CHECK
8. MECHANICAL DISASSEMBLING T1127 ONLY

B

1. MAINTENANCE

1.1.

When the SAILOR SHORT-WAVE SET type 1000 has been correctly installed, the maintenance can, dependent on the environment and working hours, be reduced to a performance check at the service workshop at intervals not exceeding 5 years. A complete performance check list is enclosed in the PERFORMANCE CHECK section.

Also inspect the antennas, cables and plugs for mechanical defects, salt deposits corrosion and any foreign bodies.

Along with each set a TEST SHEET is delivered, in which some of the measurements made at the factory are listed. If the performance check does not show the same values as those on the TEST SHEET, the set must be adjusted as described under ADJUSTMENT PROCEDURE.

Any repair of the set should be followed by a FUNCTION CHECK of the unit in question.

2. NECESSARY TEST EQUIPMENT

T1127	N140X	S1300	R1117	
X	X	X	X	<u>OSCILLOSCOPE:</u> Bandwidth 0-25 MHz Sensitivity 2mV/cm Input impedance 1 Mohm/30 pF Triggering EXT-INT-ENVELOPE E.g. PHILIPS PM3212
X		X	X	<u>PASSIVE PROBE:</u> Attenuation 10x Input resistance DC 10 Mohm Input capacitance 15 pF Compensation range 10 pF - 30 pF E.g. PHILIPS PM 9396
		X	X	<u>MULTIMETER:</u> Sensitivity (f.s.d.) 1V Input impedance 10 Mohm Accuracy (f.s.d.) <u>+2%</u> E.g. PHILIPS PM2503
X	X			<u>MULTIMETER:</u> Sensitivity 0.3V and 3A Input impedance 30 Kohm/V Accuracy (f.s.d.) <u>+1%</u> Current range 100A Voltage range 500V and 2.5 kV E.g. Unigor A43, with probe and shunt

NECESSARY TEST EQUIPMENT cont.:

T1127	N140X	S1300	R1117
		X	
			X
		X	X
			X

TONEGENERATOR:

Frequency range 200 - 3000 Hz
 Output 1V RMS
 Output impedance ≤ 600 ohm
 E.g. PHILIPS PM5107

AF VOLTMETER:

Sensitivity (f.s.d.) 300 mV
 Input impedance ≥ 4 ohm
 Accuracy (f.s.d.) $\pm 5\%$
 Frequency range 100 Hz - 5 kHz
 E.g. PHILIPS PM2503

FREQUENCY COUNTER:

Frequency range 100 Hz - 40 MHz
 Resolution 0.1 Hz at $f \geq 10$ MHz
 Accuracy $1 \cdot 10^{-7}$
 Sensitivity 100 mV RMS
 Input impedance 1 Mohm
 Single period measurement range 1 sec.
 resolution 1 mS
 E.g. PHILIPS PM6611 + PM9679

SIGNAL GENERATOR:

Frequency range 550 kHz - 30 MHz
 R1118: 100 kHz - 30 MHz
 Output impedance 50/75 ohm
 Output voltage 1 uV - 100 mV EMF
 Modulation AM, 30%, 1000 Hz
 E.g. PHILIPS PM5326

NECESSARY TEST EQUIPMENT cont.:

T1127	N140X	S1300	R1117	
X				<u>POWER SUPPLIES:</u> T1127: V _{out} 26.5V DC I _{out} 60A DC E.g. 2 pcs. LAMBDA type LMG24
		X	X	R1117/S1300: V _{out} 1 22V I _{out} 1 1.5A V _{out} 2 -45V I _{out} 2 0.2A E.g. SAILOR POWER SUPPLY type N1402
		X		<u>TEST BOX S1300:</u> SP type S1300/01 TEST BOX
X				<u>POWER METER:</u> Power range 500W E.g. Bird Thruline Wattmeter Model 43 plug-in element 500W 2-30 MHz impedance 50 ohm
X				<u>RF-AMMETER (Thermocross):</u> Current range 5A E.g. HELWEG MIKKELSEN & CO. Copen- hagen, Denmark type TR-68x71 5A
X		X		<u>DUMMY LOAD for HF bands, 4 MHz to 25 MHz</u> Impedance 50 ohm Frequency range 0-25 MHz Power range 500W E.g. BIRD Termaline Coaxial resistor Model 8401

B 4/5

T1127	X	
N140X		
S1300		
R1117		X

RF AMMETER

250 pF/3 kV-6A

10 ohm/200 W
non inductive

E.g. 10 pcs. DALE PH-25A-17, 100 ohm 5% 25W

10 ohm 250 pF

Impedance presented to the aerial input terminals (J2001)

50 ohm

Impedance presented to the aerial input terminals (J2001)

E.g. SAILOR Rx DUMMY LOAD type H219.

3. TROUBLE-SHOOTING

Trouble-shooting should only be performed by persons with sufficient technical knowledge, who have the necessary test equipment at their disposal, and who have carefully studied the operation principles and structure of the unit in question.

Start to find out whether the fault is somewhere in the antenna circuit, the power source, or in the short-wave set.

For help with trouble-shooting in the short-wave set there is a built-in test meter and test meter switch, located behind the air filter on the power supply.

When the fault has been located to a certain unit look up the PERFORMANCE CHECK list in the instruction book and make relevant performance check to incircle the fault. Then look up the CIRCUIT DESCRIPTION. This section contains schematic diagrams, description of the modules and pictures showing the location of the components. (ADJUSTMENT LOCATIONS).

Typical AC and DC voltages are indicated on the schematic diagrams.

No adjustment must take place unless the service workshop has the necessary test equipment to perform the ADJUSTMENT PROCEDURE in question.

After repair or replacement of the module look up the section NECESSARY ADJUSTMENTS AFTER REPAIR to see, whether the unit has to be adjusted or not.

Anyway the unit has to have a complete FUNCTION CHECK after repair.

4. PERFORMANCE CHECK FOR T1127A

4.1.

PREPARATION AND LOCATIONS.

4.1.1.

Refer to fig. 2 and fig. 4.

4.2.

CHECK OF FILAMENT VOLTAGE.

4.2.1.

Set MAIN SWITCH to position STAND BY.

4.2.2.

Connect the voltmeter to TP4 and TP5.

4.2.3.

Check that the voltage is $13.5 \pm 1V$.

4.3.

CHECK OF ZERO SIGNAL CURRENT.

4.3.1.

Select a frequency, and set power switch (S1300S) to min. power.

4.3.2.

Set MAIN SWITCH to position ON and key the transmitter.

4.3.3.

Set TEST SWITCH to position I_k^1 .

4.3.4.

Check that the meter reading is 100 mA on the ANODE CURRENT meter.

4.3.5.

Set TEST SWITCH to position I_k^2 .

4.3.6.

Check that the meter reading is 100 mA.

4.4.

CHECK OF DRIVER.

4.4.1.

Remove the high voltage plug located at the rear of the power supply, set MAIN SWITCH to position ON, TEST SWITCH to position I_k^1 and key the transmitter. Power switch set for min. power.

4.4.2.

Connect the voltmeter to TP3.

4.4.3.

Check that the voltage is $4 \pm 0.6V$.

4.4.4.

Connect the voltmeter to TP1.

4.4.5.

Check that the voltage is $1.60 \pm 0.15V$.

4.4.6.

Connect the voltmeter to TP1 and TP2.

4.4.7.

Check that the voltage is less than 60 mA.

4.4.8.

Connect the ammeter in series with the 28V supply wire.

4.4.9.

Check that the current is $2.7 \pm 0.2A$

4.4.10.

Set the POWER switch on the exciter to position FULL, set FREQUENCY SELECTORS to 1 and turn the drive level potentiometer fully counter clockwise. (See instruction book for S1300S).

4.4.11.

Connect 10:1 probe and oscilloscope to TP6, note the peak to peak voltage.

4.4.12.

Connect 10:1 probe and oscilloscope to TP7, and note the peak to peak voltage.

4.4.13.

Calculate the voltage gain and check that it is $16.8 \pm 0.8 dB$.

4.4.14.

Set TEST SWITCH to position DRIVE.

4.4.15.

Press key (A2H) and adjust drive level potentiometer for a reading of 80 on the ANODE CURRENT meter.

4.4.16.

Check that the envelope of the two tone signal at TP7 is undistorted.

4.4.17.

Insert the high voltage plug.

PERFORMANCE CHECK FOR T1127A cont.:

4.8.
CHECK OF SAFETY SYSTEM.

4.8.1.
Set MAIN SWITCH to position ON,
select a frequency, and key the
transmitter.

4.8.2.
Set the test switch located behind
the AIR FILTER on the power supply
to position V^{driver} and check that
the test meter reading is in the
green area.

4.8.3.
Set POWER switch to position OFF
and check that the test meter rea-
ding falls to zero. Set the POWER
switch to position ON.

4.8.4.
Check that the test meter reading is
in the green area. Pull forward the
transmitter until SAFETY SWITCH is
released, (see fig. 4) and check that
the meter reading falls to zero.

4.8.5.
Set MAIN SWITCH to position OFF and
pull forward the transmitter until
the BLOWER SAFETY switch is visible.

4.8.6.
Short-circuit the anodes of the PA
valves to chassis, to discharge the
anode voltage capacitor.

4.8.7.
Check that the BLOWER SAFETY switch is
released, tin box is opened.

4.8.8.
Fasten the tin box in open position
and push the transmitter back to
operation position.

4.8.9.
Set MAIN SWITCH to position ON and wait
approx. one minute and check that the
test meter reading is zero.

4.8.10.
Repeat 4.8.5. and 4.8.6. and release
the fastenings.

5. ADJUSTMENT PROCEDURE FOR T1127A

5.1. ADJUSTMENT OF FILAMENT STABILIZER.

5.1.1. Set MAIN SWITCH to position STAND BY, and connect the voltmeter to TP4 (+) and TP5 (-).

5.1.2. Adjust R1105 to 13.5V.

5.3. ADJUSTMENT OF ZERO SIGNAL CURRENT.

5.3.1. Set TEST SWITCH to position I_{k1} .

5.3.2. Turn R606 and R607 fully counter clockwise (fig. 2).

5.3.3. Key transmitter in A1 mode with POWER switch LOW.

5.3.4. Adjust R606 for a reading of 80 on the ANODE CURRENT meter.

5.3.5. Set TEST SWITCH to position I_{k2} and adjust R607 for a reading of 80 on the ANODE CURRENT meter.

5.4. ADJUSTMENT OF DRIVE LEVEL.

5.4.1. Set TEST SWITCH to position DRIVE and POWER switch on the exciter to position FULL.

5.4.2. Key transmitter in A1 mode.

5.4.3. Adjust drive level potentiometer for a METER reading of 80 on the ANODE CURRENT METER.

5.8. ADJUSTMENT OF DRIVER.

5.8.1. Remove the high voltage plug located on the rear side of the power supply.

5.8.2. Set MAIN SWITCH to position ON and key the transmitter, POWER switch set to min. power.

5.8.3. Connect the voltmeter to 28V supply wire and note the meter reading.

5.8.4. Connect the voltmeter to TP1 and adjust R411 according to the table below.

28V supply	TP1
26V	1.5V
27V	1.55V
28V	1.6V
29V	1.65V
29.4V	1.68V

5.8.5. Connect the voltmeter to TP1 and TP2 and check that the voltage is less than 60 mA.

5.8.6. Set POWER switch to FULL.

5.8.7. Set TEST SWITCH to position DRIVE, adjust drive level potentiometer for a METER reading of 30.

5.8.8. Adjust L401 (see fig. 3) to max. METER deflection and keep the METER deflection at 30 by means of the drive level potentiometer.

5.8.9. Seal the core and insert the high voltage plug.

6. NECESSARY ADJUSTMENT AFTER REPAIR FOR T1127A

In the following paragraphs reference is made to the ADJUSTMENT PROCEDURE T1127 and PERFORMANCE CHECK T1127.

Locations: refer to fig. 2 to fig. 6.

6.1.
PA-UNIT 200.
Perform the RUN-IN OF THE STATION AFTER A LONGER LAY-UP PERIOD, described in the OPERATING INSTRUCTIONS FOR SAILOR MF/HF TELEPHONY STATION.
Execute 4.2., 5.3.

6.2.
DRIVER UNIT 400.
Execute 5.8. and 4.4.

6.3.
SERVICE UNIT 600.
Execute 5.3., 4.8.1. to 4.8.3.

6.4.
FILAMENT STABILIZER 1100.
Execute 5.1.

7. FUNCTION CHECK FOR T1127A

FUNCTION CHECK:

7.1.

Set MAIN SWITCH to position ON.

7.2.

Set FREQUENCY SELECTORS to position 2.

7.3.

Set TEST SWITCH to position I_{k1} .

7.4.

Select A1 mode, set POWER switch to min. and key the transmitter.

7.5.

Check that the METER reading on ANODE CURRENT meter is 100 ± 10 mA.

7.6.

Set TEST SWITCH to I_{k2} and check that the METER reading is 100 ± 10 mA on ANODE CURRENT meter.

7.7.

Set test switch to position DRIVE. Select A1 mode, set POWER switch to FULL, and key the transmitter.

7.8.

Adjust the drivelevel potentiometer in question (see instruction book for S1300S) for a meter reading of 80 on the ANODE CURRENT meter.

7.9.

Execute the test procedure described at the front of T1127A.

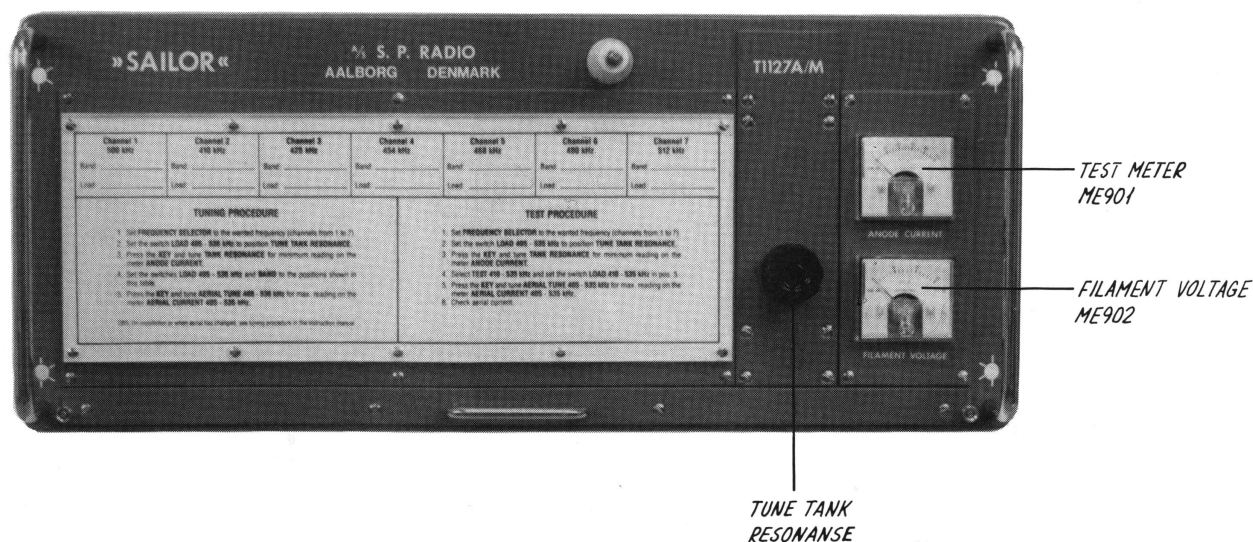
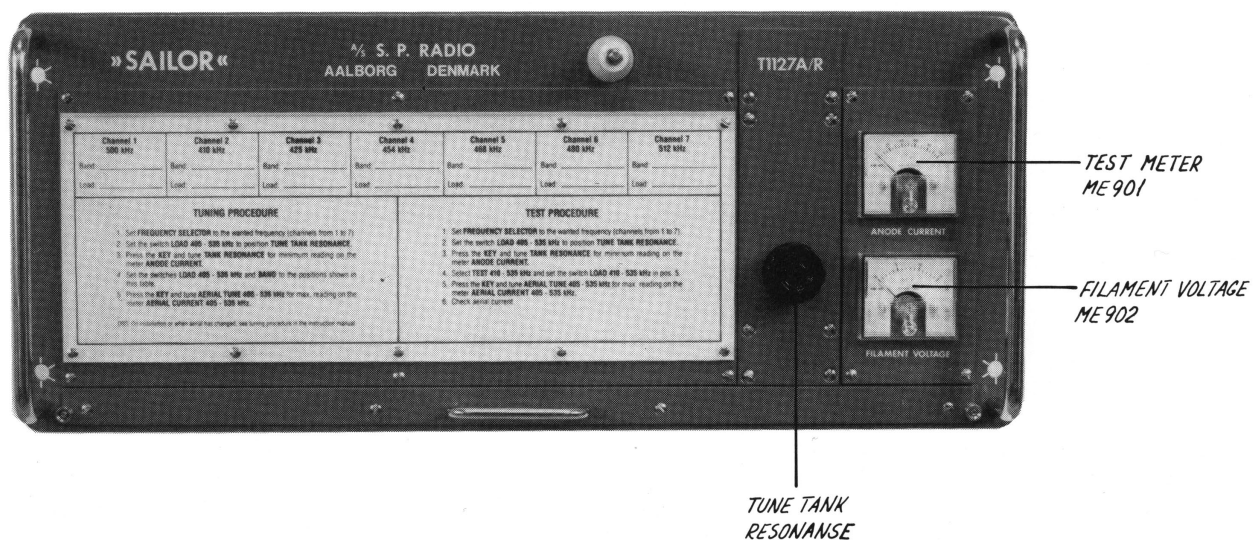
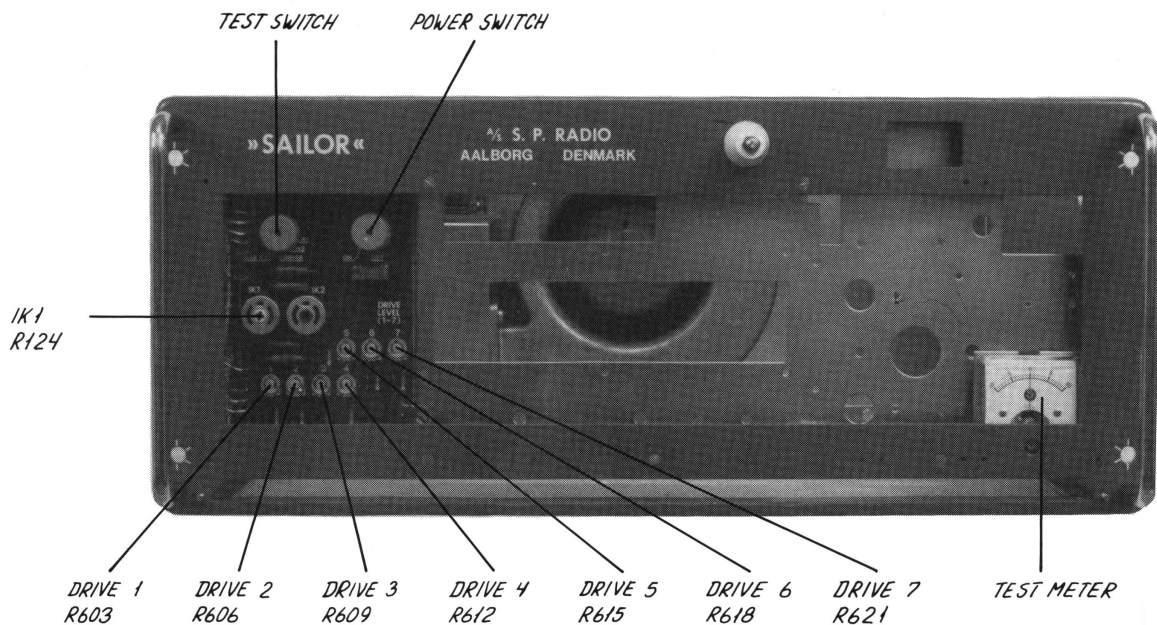


FIG. 1. TUNING FACILITIES T1127A

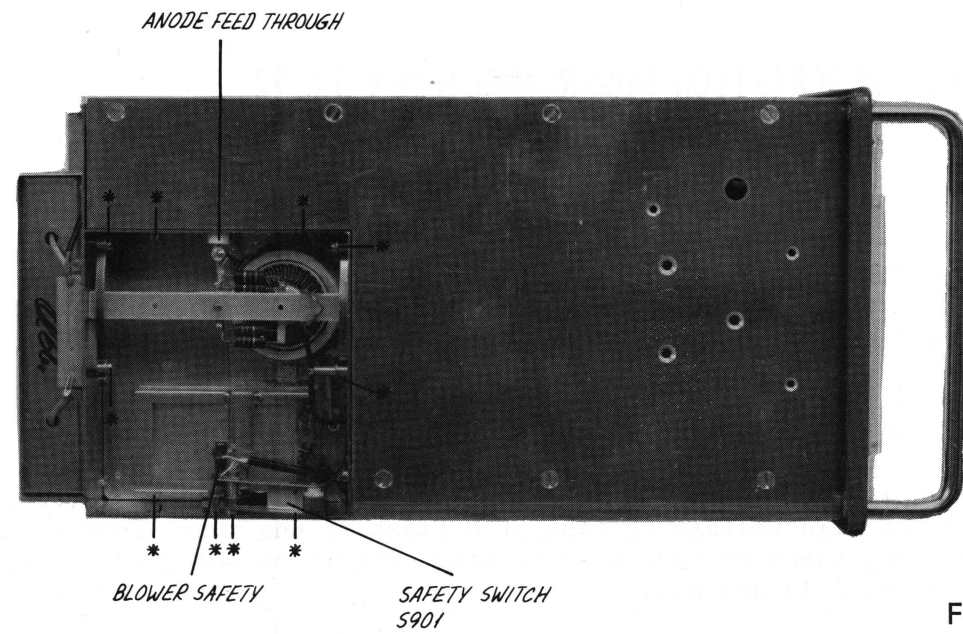


FIG. 4

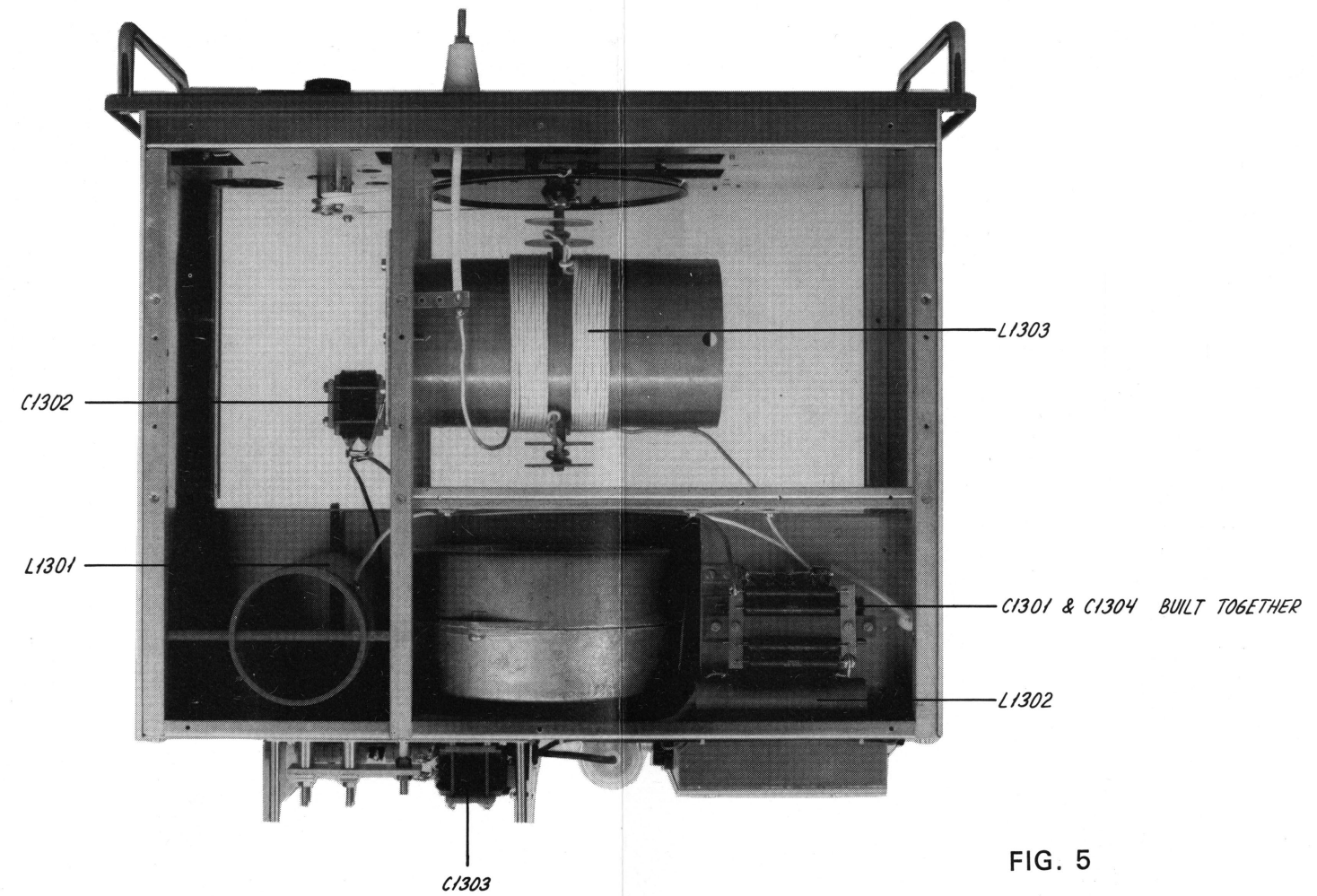


FIG. 5

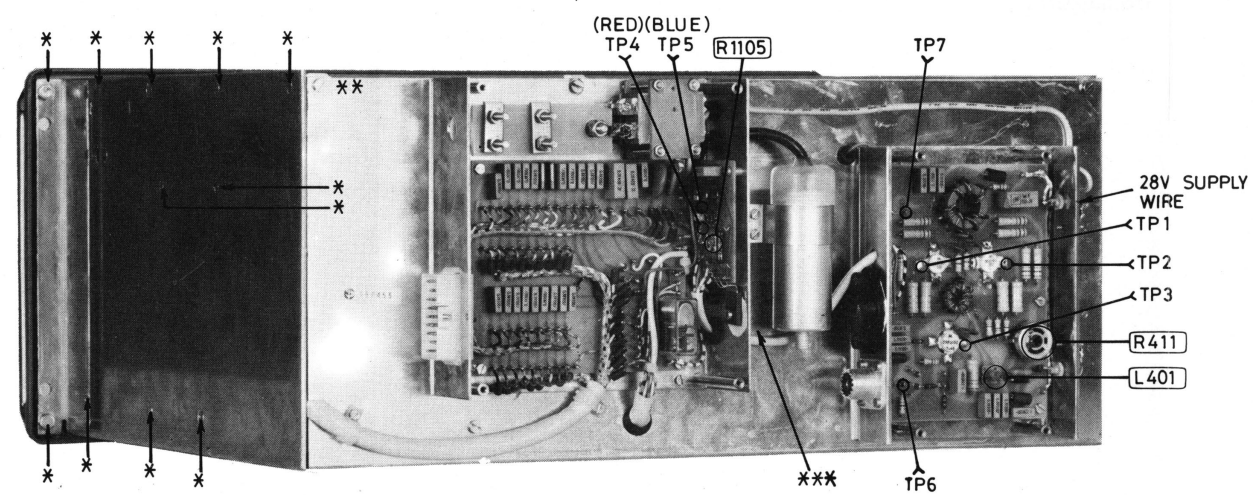


FIG. 3

CIRCUIT DESCRIPTION POWER AMPLIFIER T1127

POWER AMPLIFIER

The power amplifier consists of one beam power tetrode tube RCA8122.

There are made difference protecting circuits to protect the tube and the driver. In the anode supply there are 60 ohm (R105 to R108) in order to limit the plate peak current during a flash in the tube. In the screen grid supply there is a current limiting circuit placed in the power supply. To prevent high voltage in case of a flash in the tube, from getting into the driver, there is made a protecting circuit on the grid consisting of D304, D305, C313 and R314.

A filter is made to obtain match between the driver and the grid. The filter consists of L302, L301, C301, the coax cable from the driver to the PA-print and the input capacitance of the PA tube. The filter is terminated with R301 to R305.

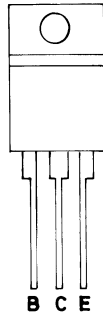
The filaments is supplied with 13.5V from the filament stabilizer.

COOLING SYSTEM

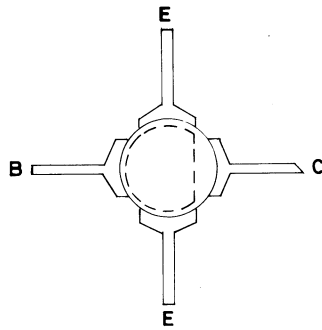
Within the transmitter there is a blower which provides the necessary cooling for the transmitter. This means that the transmitter can be mounted away from the rest of the station. Before the air flows into the transmitter it passes through an air filter located in the bottom of the transmitter. If the blower stops, a safety system will stop the transmitter, so that no components are damaged.

T1127S

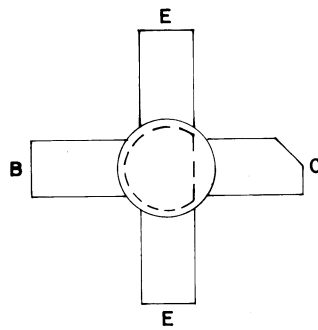
TOP VIEW



BD 241 A

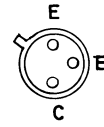


ZRF 0132

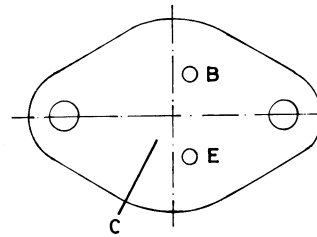


MRF 401 mp

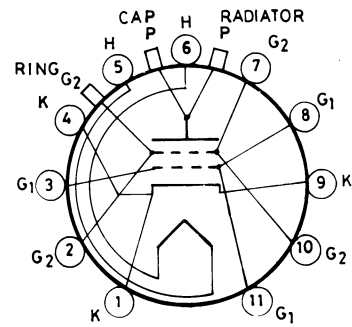
BOTTOM VIEW



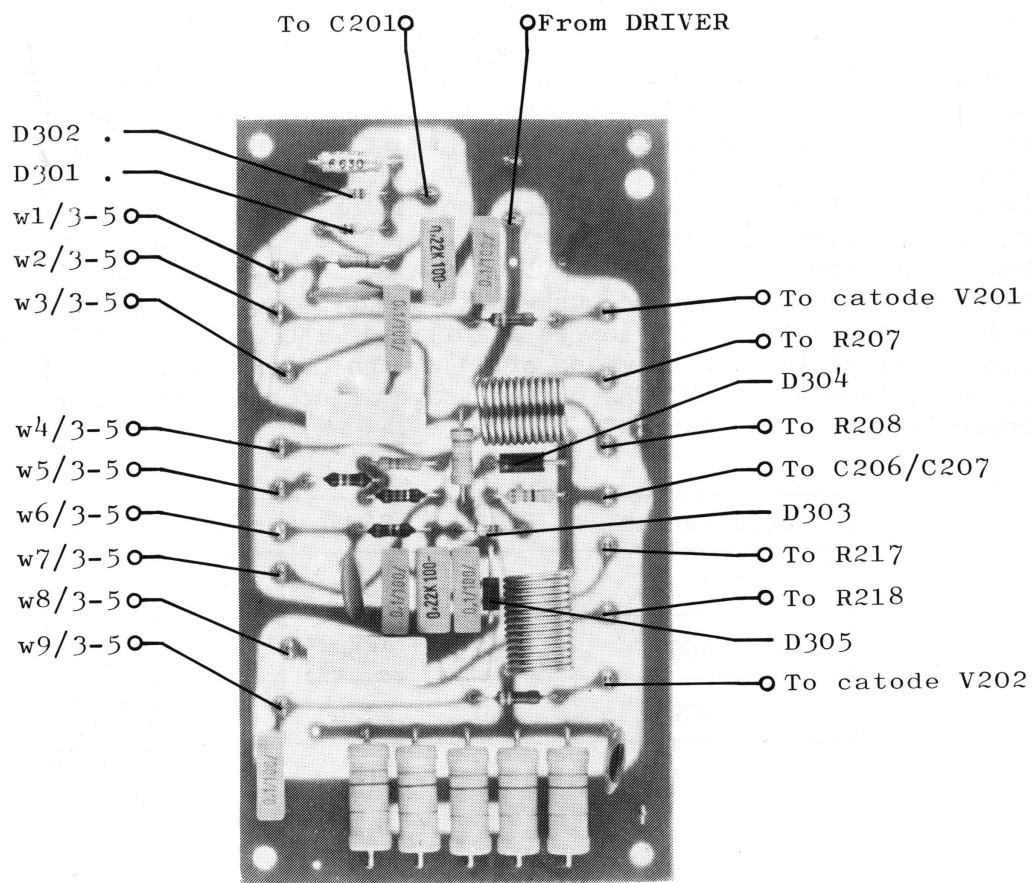
BC 141-10

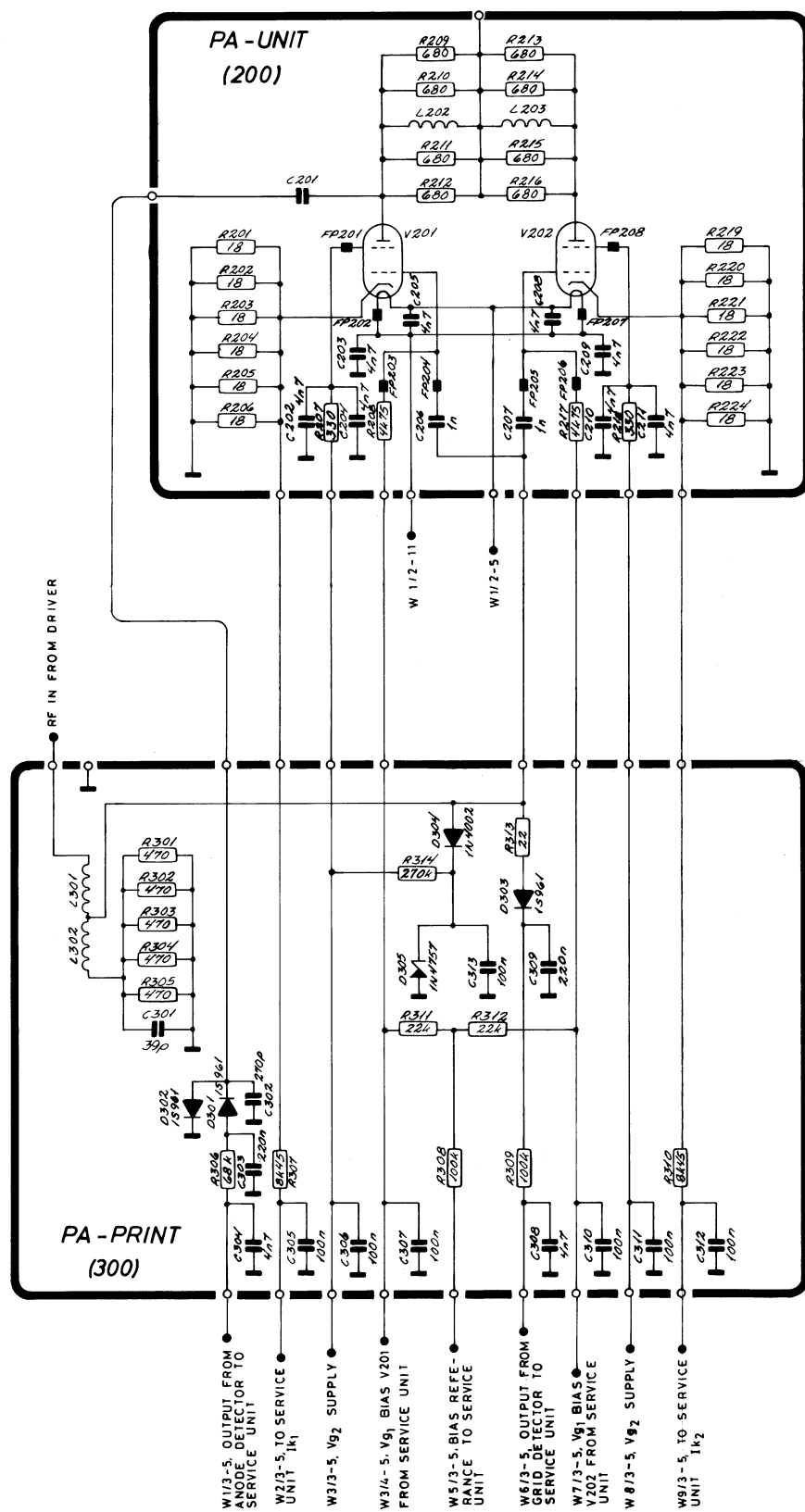


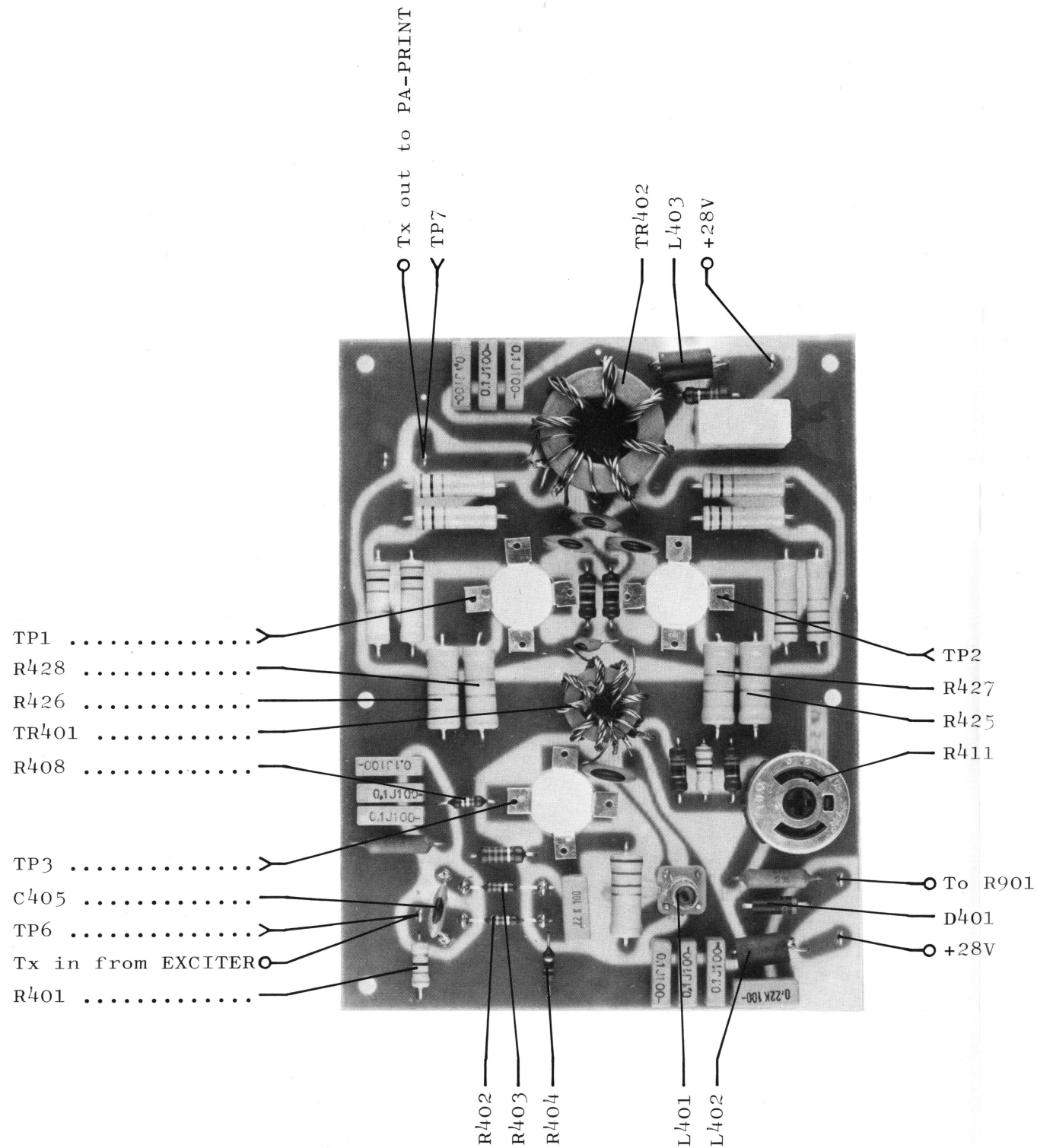
MJ 802



8122

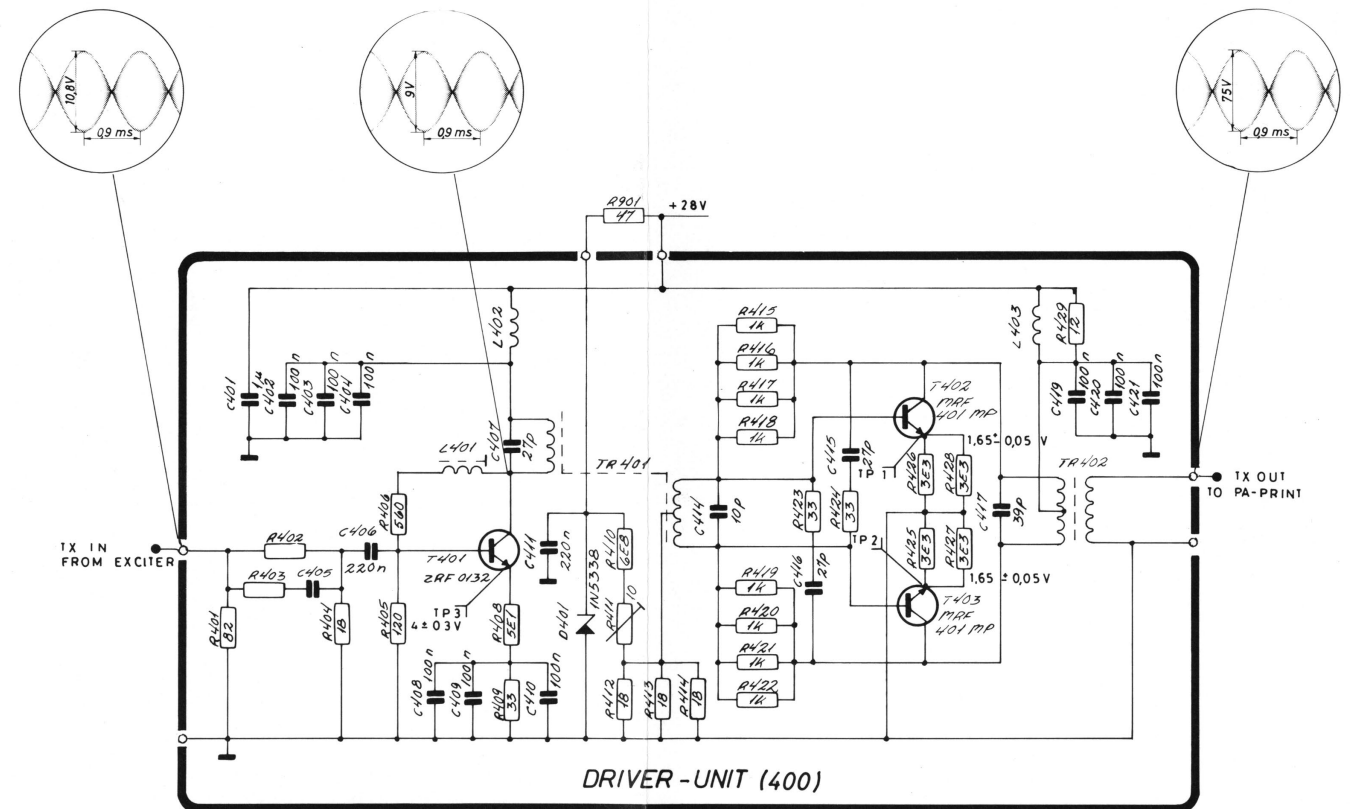






TEST CONDITIONS

Frequency : 2 MHz or as close as possible.
Drive : Adjusted to zero on the testmeter.
Oscilloscope input : Passive probe 10 Mohm//15 pF.
TP: Testpoints
Values on oscillograms is approx. values.

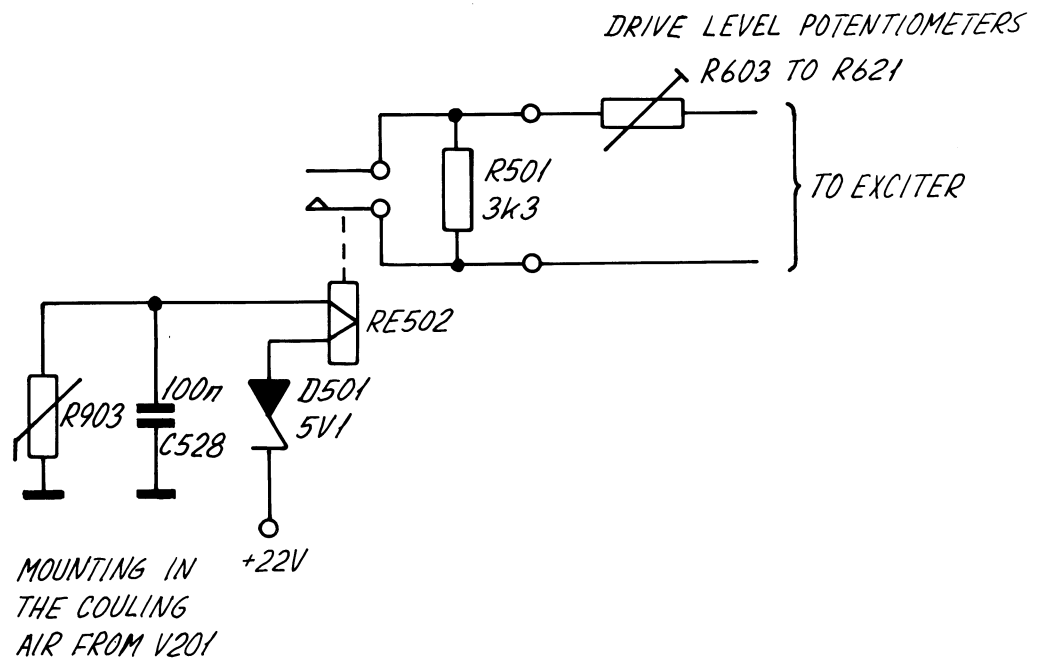


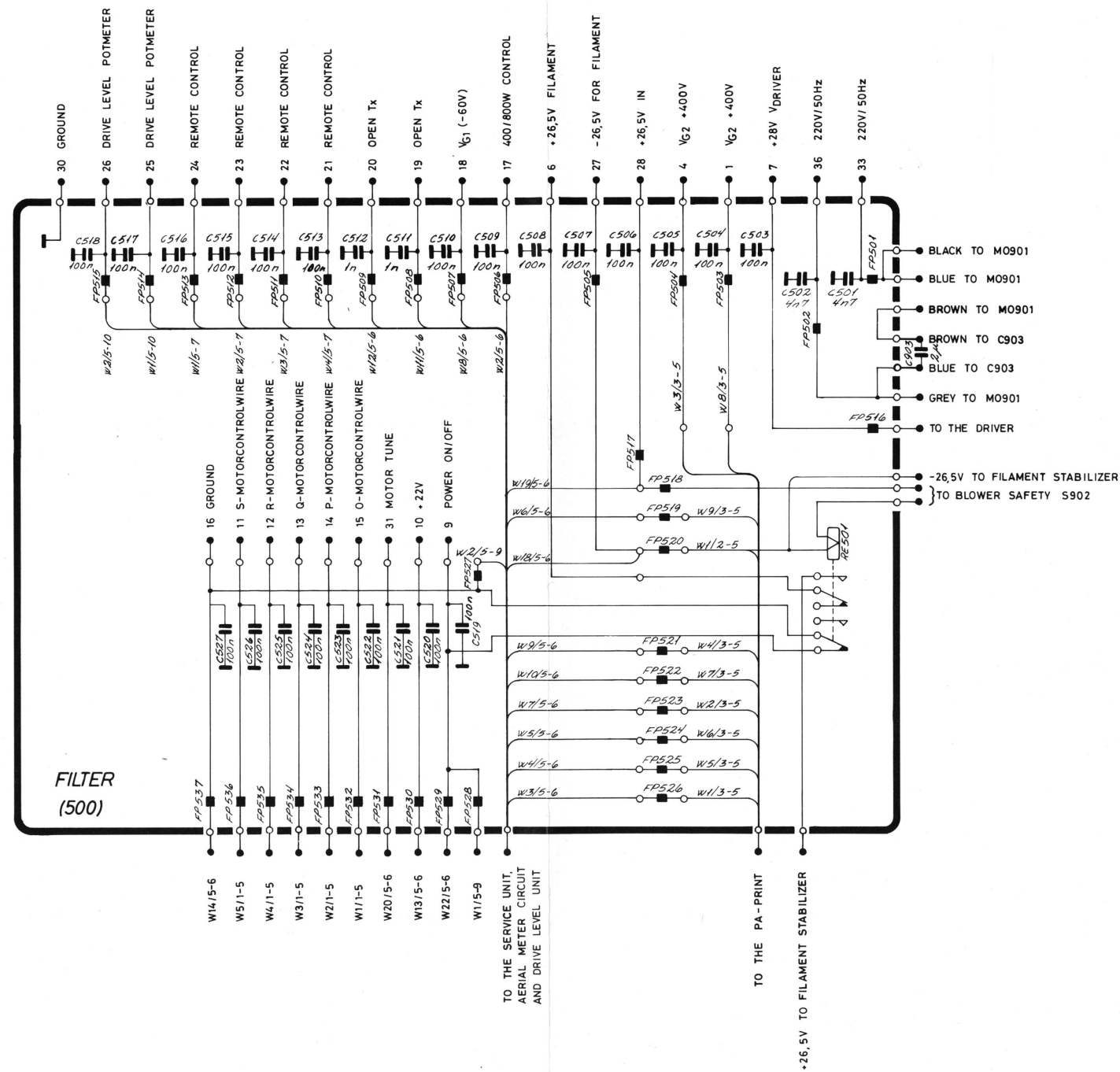
CIRCUIT DESCRIPTION THERMAL PROTECTION CIRCUIT ONLY T1127L

THERMAL PROTECTION CIRCUIT

The circuit protects the PA-tubes against excessive temperatures. When the plate temperature is above 250°C the value of the PTC-resistor R902 will be so high that the relay RE502 will release and R501 will be connected in series with the drive level potentiometer to reduce the drive level approx. 6 dB.

When the temperature is below approx. 200°C again the value of the PTC-resistor R902 will be so small that the relay RE502 will be activated and R501 will be short-circuited and drive level will be on normal.





CIRCUIT DESCRIPTION SERVICE UNIT T1127

SERVICE UNIT

The service unit consists of a test meter, which is located behind the right front panel cover and a printed circuit board located behind the left front panel cover.

On the printed circuit board following controls are placed:

TEST SWITCH (S601) with following functions:

Ik1: The cathode current in tube V201 is measured.

Ik2: The cathode current in tube V202 is measured.

The voltage drop across the cathode resistor is used to give an information of the cathode current. R307 or R310 is in serial with the test meter to give full scale deflection of 300 mA cathode current.

DRIVE: The positive peak of the RF signal on the grids is measured (the detector is located on the PA-print and consists of D303 and C309) and compared to the neg. bias in such a way that when the pointer of the test meter shows 3 div. the drive level is correct.

LOAD: The positive peak of the RF signal on the grids is measured (same detector as in drive) and compared with the peak to peak voltage swing on the anodes (peak to peak detector is located on the PA-print and consists of D301, D302 and C303) in such a way that when the pointer of the test meter is at zero, the tubes are properly loaded. When changing from C.T. bands to HF bands the anode impedance changes, and the sensitivity of the load meter is changed. This is done by means of RE601, R602 and R603.

POWER switch (S602): When it is in position ON the transmitter is controlled with the handset, in position OFF the anode and screen grid supply is switched off.

MOTOR switch (S603): When MOTOR switch is in position AUTOM, the motor (M0101) is controlled from the exciter. When pin 31 in P901 is grounded RE602 is activated and +26.5V is supplied to the motor and it will rotate. When the drum switch has reached the correct band, pin 31 is disconnected but the motor rotates until S101 is released. Then RE602 disconnects +26.5V to the motor and short-circuits the motor through R611 in order to stop the motor quickly. S101 is released when the drum switch is locked in the correct position. When MOTOR switch is in position MAN., the motor will rotate until the switch is switched back into position STOP.

The zero signal currents in the PA tubes are adjusted by means of R606 and R607. The relay RE603 is opened when the transmitter is not keyed and the negative grid bias is then -60V to ensure that the tubes are cut off.

T1127S \ T1127A

W1/5-6 DRIVE SELECT I
W2/5-6 DRIVE SELECT II
W3/5-6 DRIVE SELECT III
W18/5-6 DRIVE SELECT IV
W19/5-6 DRIVE SELECT V
W15/5-6 DRIVE SELECT VI
W20/5-6 DRIVE SELECT VII

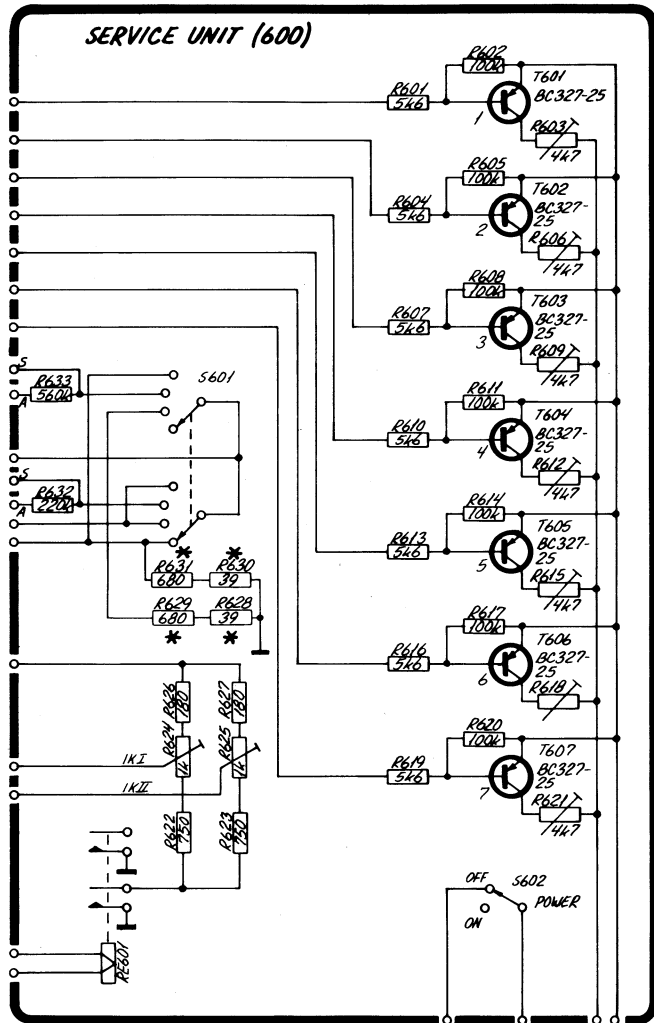
W4/5-6 BIAS DRIVE

W3/5-9 TEST METER
W5/5-6 SIGNAL DRIVE
W6/5-6 1K II
W7/5-6 1K I

W8/5-6 V_{b1} (-60V)

W9/5-6 BIAS TUBE I
W10/5-6 BIAS TUBE II

W11/5-6 OPEN Tx
W12/5-6 OPEN Tx



* ARE NOT MOUNTED IN T1127S

W1/5-6 GROUND

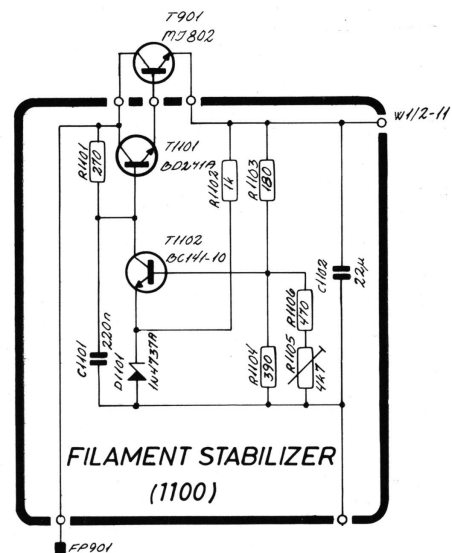
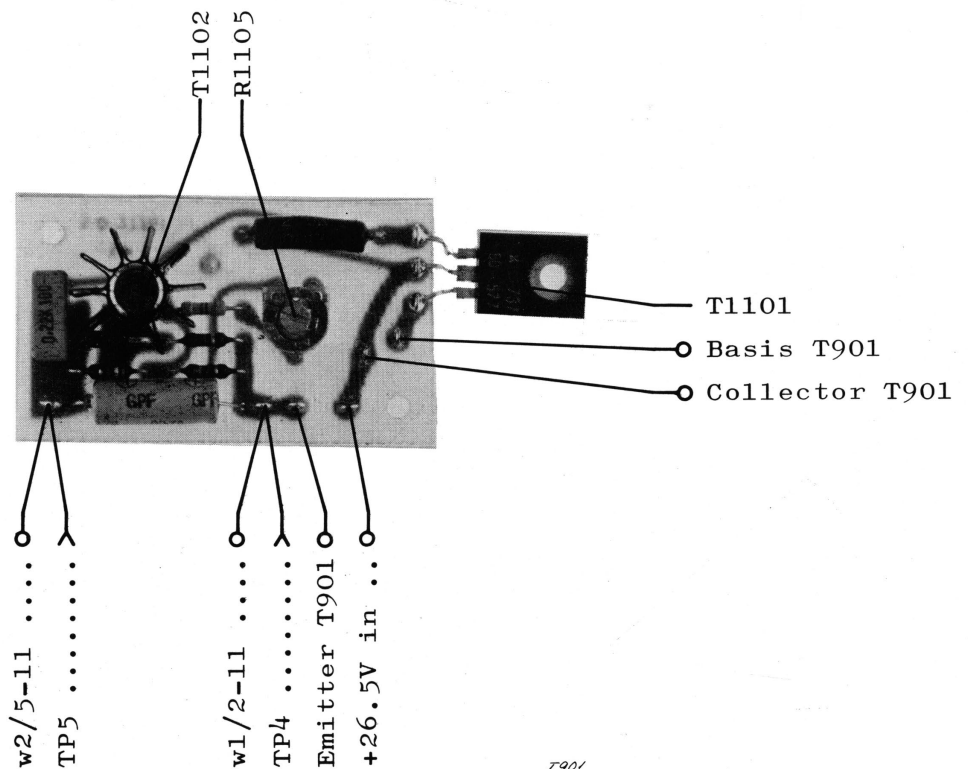
W22/5-6 BLACK PS.

W28/5-6 DRIVE LEVEL

W24/5-6 DRIVE LEVEL

A1/1 T1127

The stabilizer is supplied with 26.5V DC either direct from ship mains when N1400 is used, or via a rectifier when N1401 is used. The stabilizer is a serial regulator. It is mounted on the side of the filter box. T901 is mounted on the side of the driver unit.



Coil section T1127

Symbol	Description			Manufact.	
C112	Capacitor	T1127	14nF	S.P.	83720/123
C121	Capacitor	T1127	14nF	S.P.	
L107	MF Choke			S.P.	TL 071
L108	RF Choke			S.P.	TL 275

PA-unit T1127

Symbol	Description	Manufact.	
R201-			
R206	Resistor 18 ohm 5% MF 2W	Electrosil	N8
R207	Resistor 330 ohm 2% 1W	Vitrohm	253-0
R208	Resistor 4,75Kohm 1% 1/2W	Philips	2322 152 54752
R209-			
R216	Resistor 680 ohm 1W	Vitrohm	BT107-0
R217	Resistor 4,75Kohm 1% 1/2W	Philips	2322 152 54752
R218	Resistor 330 ohm 2% 1W	Vitrohm	253-0
R219-			
R224	Resistor 18 ohm 5% MF 2W	Electrosil	N8
C201	Capacitor	S.P.	
C202	Capacitor ceramic 4,7nF -20/+80% 400V	Ferroperm	9/0138,9
C203	Capacitor ceramic 4,7nF -20/+80% 400V	Ferroperm	9/0138,9
C204	Capacitor ceramic 4,7nF -20/+80% 400V	Ferroperm	9/0138,9
C205	Capacitor ceramic 4,7nF -20/+80% 400V	Ferroperm	9/0138,9
C206	Capacitor ceramic 1nF -20/+80% 5KV	Ferroperm	9/0138,9 isol.
C207	Capacitor ceramic 1nF -20/+80% 5KV	Ferroperm	9/0138,9 isol.
C208	Capacitor ceramic 4,7nF -20/+80% 400V	Ferroperm	9/0138,9
C209	Capacitor ceramic 4,7nF -20/+80% 400V	Ferroperm	9/0138,9
C210	Capacitor ceramic 4,7nF -20/+80% 400V	Ferroperm	9/0138,9
C211	Capacitor ceramic 4,7nF -20/+80% 400V	Ferroperm	9/0138,9
L202	Parasit coil	S.P.	TL259
V201	PA tube	RCA	8122
FP201-			
FP208	Ferroxcube beads	Philips	4322 020 34420

PA-print T1127

Symbol	Description				Manufact.	
R301	Resistor	470 ohm		1,15W	Philips	2322 214 13471
R302	Resistor	470 ohm		1,15W	Philips	2322 214 13471
R303	Resistor	470 ohm		1,15W	Philips	2322 214 13471
R304	Resistor	470 ohm		1,15W	Philips	2322 214 13471
R305	Resistor	470 ohm		1,15W	Philips	2322 214 13471
R306	Resistor	68 Kohm		0,33W	Philips	2322 211 13683
R307	Resistor	8,45 Kohm	1% MF	0,4 W	Philips	2322 151 58452
R308	Resistor	100 Kohm		0,33W	Philips	2322 211 13104
R309	Resistor	100 Kohm		0,33W	Philips	2322 211 13104
R310	Resistor	8,45 Kohm	1% MF	0,4 W	Philips	2322 151 58452
R311	Resistor	22 Kohm		0,33W	Philips	2322 211 13223
R312	Resistor	22 Kohm		0,33W	Philips	2322 211 13223
R313	Resistor	22 ohm		0,33W	Philips	2322 211 13229
R314	Resistor	270 Kohm		0, 5W	Philips	2322 212 13274
C301	Capacitor ceramic	39pF	$\pm 5\%$	400V	Ferroperm	9/0112.9
C302	Capacitor polyester	270pF		500V	Philips	2222 427 42701
C303	Capacitor polyester	0,22uF		100V	ERO	MKT 1822 422/0
C304	Capacitor ceramic	4,7nF	-20/+80%	400V	Ferroperm	9/0138.9
C305	Capacitor polyester	0,1uF		100V	ERO	MKT 1822 410/0
C306	Capacitor polyester	0,1uF		400V	ERO	MKT 1822 410/4
C307	Capacitor polyester	0,1uF		100V	ERO	MKT 1822 410/0
C308	Capacitor ceramic	4,7nF	-20/+80%	400V	Ferroperm	9/0138.9
C309	Capacitor polyester	0,22uF		100V	ERO	MKT 1822 422/0
C310	Capacitor polyester	0,1uF		100V	ERO	MKT 1822 410/0
C311	Capacitor polyester	0,1uF		400V	ERO	MKT 1822 410/4
C312	Capacitor polyester	0,1uF		100V	ERO	MKT 1822 410/0
C313	Capacitor polyester	0,1uF		100V	ERO	MKT 1822 410/0
D301	Diode				Texas	1S961
D302	Diode				Texas	1S961
D303	Diode				Texas	1S961
D304	Diode				Motorola	1N4002
D305	Zener diode				Motorola	1N4757
L301	Coil				S.P.	TL221
L302	Coil				S.P.	TL221

c

Driver unit T1127

Symbol	Description			Manufact.	
R401	Resistor	82 ohm	0,5W	Philips	2322 212 13829
R402	See chapter for driver				
R403	See chapter for driver				
R404	Resistor	18 ohm	0,33W	Philips	2322 211 13189
R405	Resistor	120 ohm	0,5W	Philips	2322 212 13121
R406	Resistor	560 ohm	1,15W	Philips	2322 214 13561
R407	Not used				
R408	Resistor	5,1 ohm	0,33W	Philips	2322 211 13518
R409	Resistor	33 ohm 2%	1W	Vitrohm	253-0
R410	Resistor	6,8 ohm 2%	1W	Vitrohm	253-0
R411	Resistor, potentiometer 10ohm 10%			AB Metal	Typ. 115 Q7
R412	Resistor	18 ohm	0,5W	Philips	2322 212 13189
R413	Resistor	18 ohm	0,5W	Philips	2322 212 13189
R414	Resistor	18 ohm	0,5W	Philips	2322 212 13189
R415-					
R422	Resistor	1Kohm	0,67W	Philips	2322 213 13102
R423	Resistor	33 ohm	0,5W	Philips	2322 212 13339
R424	Resistor	33 ohm	0,5W	Philips	2322 212 13339
R425-					
R428	Resistor	3,3 ohm	1,15W	Philips	2322 214 13338
R429	Resistor	12 ohm	0,5W	Philips	2322 212 13129
C401	Capacitor, polyester	1uF	100V	ERO	MKT 1822-510/0
C402-					
C404	Capacitor, polyester	0,1uF	100V	ERO	MKT 1822-410/0
C405	See chapter for driver				
C406	Capacitor, polyester	0,22uF	100V	ERO	MKT 1822-422/0
C407	Capacitor, ceramic	27pF 5%	400V	Ferroperm	9/0112,9
C408-					
C410	Capacitor, polyester	0,1uF	100V	ERO	MKT, 1822-410/0
C411	Capacitor, polyester	0,22uF	100V	ERO	MKT 1822-410/0

a				Driver unit T1127	
Symbol	Description			Manufact.	
C414	Capacitor, ceramic	10pF 5%	400V	Ferroperm	9/0112,9
C415	Capacitor, ceramic	27pF 5%	400V	Ferroperm	9/0112,9
C416	Capacitor, ceramic	27pF 5%	400V	Ferroperm	9/0112,9
C417	Capacitor, ceramic	39pF 5%	400V	Ferroperm	9/0112,9
C418	Not used				
C419-					
C420	Capacitor, polyester	0,1uF	100V	ERO	MKT 1822-410/0
T401	Transistor			Motorola	ZRF 0132
T402	Transistor			Motorola	MRF 401MP
T403	Transistor			Motorola	MRF 401MP
D401	Diode, zener				1N5338
L401	Coil			S.P.	TL 114
L402	Choke			S.P.	TL 067
L403	Choke			S.P.	TL 067
TR401	Transformer			S.P.	TL 228
TR402	Transformer, output			S.P.	TL 229

b

Filter T1127

Symbol	Description	Manufact.	
C501	Capacitor ceramic 4n7 -20/+80 % 5KV	Ferroperm	9/138,9 isol.
C502	Capacitor ceramic 4n7 -20/+80% 5KV	Ferroperm	9/128,9 isol.
C503	Capacitor polyester 0,1uF 20% 100V	ERO	MKT 1822 410/0
C504	Capacitor polyester 0,1uF 20% 400V	ERO	MKT 1822 410/4
C505	Capacitor polyester 0,1uF 20% 400V	ERO	MKT 1822 410/4
C506-			
C510	Capacitor polyester 0,1uF 20% 100V	ERO	MKT 1822 410/0
C511	Capacitor polycarbonate 1nF 20% 630V	ERO	KC 1849/210/6
C512	Capacitor polycarbonate 1nF 20% 630V	ERO	KC 1849/210/6
C513-			
C527	Capacitor polyester 0,1uF 20% 100V	ERO	MKT 1822 410/0
RE501	Relay 24V	Pasi	KS 3
FP501-			
FP537	Ferroxcube beads	Kaschke	K3/1200/01 Hz 4/2/7A
	T1127L		
C528	Capacitor polyester 0,1uF 20% 100V	ERO	MKT 1822 410/0
RE502	Relay 12 V	Clare	PRME 15002
R501	Resistor 3.3Kohm 0.33W	Philips	2322 211 13332

84.10.30

POSITION	DESCRIPTION		MANUFACTOR	TYPE	S.P.NUMBER
	SERVICE MODULE	T1127S T1127A/R T1127A/M	ESPERA	PRINT NR.5-0-24278A	600206
S601	SWITCH	RBP12F2X4NCC	JEAN REAUND	RBP12F2X4NCC	42.121
S602	SWITCH	RBP12F4X2NCC	JEAN REAUND	RBP12F4X2NCC	42.125
R601	RESISTOR	5.6 KOHM 5% 0.33W	PHILIPS	2322 181 13562	01.218
R602	RESISTOR	100 KOHM 5% 0.33W	PHILIPS	2322 181 13104	01.250
R603	RESISTOR	4.7 KOHM 20% 0.5W	RUF	0650-610	07.602
R604	RESISTOR	5.6 KOHM 5% 0.33W	PHILIPS	2322 181 13562	01.218
R605	RESISTOR	100 KOHM 5% 0.33W	PHILIPS	2322 181 13104	01.250
R606	RESISTOR	4.7 KOHM 20% 0.5W	RUF	0650-610	07.602
R607	RESISTOR	5.6 KOHM 5% 0.33W	PHILIPS	2322 181 13562	01.218
R608	RESISTOR	100 KOHM 5% 0.33W	PHILIPS	2322 181 13104	01.250
R609	RESISTOR	4.7 KOHM 20% 0.5W	RUF	0650-610	07.602
R610	RESISTOR	5.6 KOHM 5% 0.33W	PHILIPS	2322 181 13562	01.218
R611	RESISTOR	100 KOHM 5% 0.33W	PHILIPS	2322 181 13104	01.250
R612	RESISTOR	4.7 KOHM 20% 0.5W	RUF	0650-610	07.602
R613	RESISTOR	5.6 KOHM 5% 0.33W	PHILIPS	2322 181 13562	01.218
R614	RESISTOR	100 KOHM 5% 0.33W	PHILIPS	2322 181 13104	01.250
R615	RESISTOR	4.7 KOHM 20% 0.5W	RUF	0650-610	07.602
R616	RESISTOR	5.6 KOHM 5% 0.33W	PHILIPS	2322 181 13562	01.218
R617	RESISTOR	100 KOHM 5% 0.33W	PHILIPS	2322 181 13104	01.250
R618	RESISTOR	4.7 KOHM 20% 0.5W	RUF	0650-610	07.602
R619	RESISTOR	5.6 KOHM 5% 0.33W	PHILIPS	2322 181 13562	01.218
R620	RESISTOR	100 KOHM 5% 0.33W	PHILIPS	2322 181 13104	01.250
R621	RESISTOR	4.7 KOHM 20% 0.5W	RUF	0650-610	07.602
R622	RESISTOR	750 OHM 5% 4W	PHILIPS	2322 329 04751	05.796
R623	RESISTOR	750 OHM 5% 4W	PHILIPS	2322 329 04751	05.796
R624	RESISTOR	1 KOHM 10% 3W	AB ELECTRONIC	115Q7	07.615
R625	RESISTOR	1 KOHM 10% 3W	AB ELECTRONIC	115Q7	07.615
R626	RESISTOR	180 OHM 5% 4W	PHILIPS	2322 329 04181	05.781
R627	RESISTOR	180 OHM 5% 4W	PHILIPS	2322 329 04181	05.781
R628	RESISTOR	39 OHM 5% 0.33W	PHILIPS	2322 181 13399	01.164
R629	RESISTOR	680 OHM 5% 0.33W	PHILIPS	2322 181 13681	01.195
R630	RESISTOR	39 OHM 5% 0.33W	PHILIPS	2322 181 13399	01.164
R631	RESISTOR	680 OHM 5% 0.33W	PHILIPS	2322 181 13681	01.195
R632	RESISTOR	220 KOHM 5% 0.33W	PHILIPS	2322 181 13224	01.258
R633	RESISTOR	680 KOHM 5% 0.33W	PHILIPS	2322 181 13684	01.270
RE601	RELAY	24V DC 2 CONTACTS 0.7A	SIEMENS	V23100-V4324-B0000	21.064
T601	TRANSISTOR	BC327-25	*PHILIPS	BC327-25	28.046
T602	TRANSISTOR	BC327-25	*PHILIPS	BC327-25	28.046
T603	TRANSISTOR	BC327-25	*PHILIPS	BC327-25	28.046
T604	TRANSISTOR	BC327-25	*PHILIPS	BC327-25	28.046
T605	TRANSISTOR	BC327-25	*PHILIPS	BC327-25	28.046

84.10.30

POSITION	DESCRIPTION		MANUFACTOR	TYPE	S.P.NUMBER
T606	TRANSISTOR	BC327-25	*PHILIPS	BC327-25	28.046
T607	TRANSISTOR	BC327-25	*PHILIPS	BC327-25	28.046

b Chassis T1127						
Symbol	Description				Manufact.	
R901	Resistor	47 ohm 5%	15W	Vitrohm	220-0	
C903	Capacitor	2uF	400V	NETO	Type LC200	
T901	Transistor			Motorola	MJ 802	
S901	Microswitch			Cherry	E62-10H	
ME901	Servicemeter	\pm 100uA DC		Shinohara	MR 45P	
M0901	Blower	1x220V 50 Hz		EBM	Type RG E 120-2 220V 2100 omdr.	
P901	Plug	1772		Molex	03-06-2364	
J901	Coaxsocket			K.V.Hansen	S0239	
FP901	Ferroxcube beads			Kaschke	K3/1200/01Hz 4/2/719	
		T1127L				
R902	Resistor PTC	110 ^o		Microtherm	PTC 110 KYC 511	
R903	Resistor PTC	110 ^o		Microtherm	PTC 110 KYC 511	

Drive level unit T1127

<i>Symbol</i>	<i>Description</i>			<i>Manufact.</i>	
R1001	Resistor potentiometer	4,7 Kohm	$\frac{1}{2}$ W	Philips	2322 482 30472
R1002	Resistor potentiometer	4,7 Kohm	$\frac{1}{2}$ W	Philips	2322 482 30472
R1003	Resistor potentiometer	4,7 Kohm	$\frac{1}{2}$ W	Philips	2322 482 30472
R1004	Resistor potentiometer	4,7 Kohm	$\frac{1}{2}$ W	Philips	2322 482 30472
R1005	Resistor potentiometer	4,7 Kohm	$\frac{1}{2}$ W	Philips	2322 482 30472
R1006	Resistor potentiometer	4,7 Kohm	$\frac{1}{2}$ W	Philips	2322 482 30472
R1007	Resistor potentiometer	4,7 Kohm	$\frac{1}{2}$ W	Philips	2322 482 30472
R1008	Resistor potentiometer	4,7 Kohm	$\frac{1}{2}$ W	Philips	2322 482 30472
R1009	Resistor potentiometer	4,7 Kohm	$\frac{1}{2}$ W	Philips	2322 482 30472
R1010	Resistor potentiometer	4,7 Kohm	$\frac{1}{2}$ W	Philips	2322 482 30472
R1011	Resistor potentiometer	4,7 Kohm	$\frac{1}{2}$ W	Philips	2322 482 30472
R1012	Resistor potentiometer	4,7 Kohm	$\frac{1}{2}$ W	Philips	2322 482 30472
R1013	Resistor potentiometer	4,7 Kohm	$\frac{1}{2}$ W	Philips	2322 482 30472
R1014	Resistor potentiometer	4,7 Kohm	$\frac{1}{2}$ W	Philips	2322 482 30472
R1015	Resistor potentiometer	4,7 Kohm	$\frac{1}{2}$ W	Philips	2322 482 30472
R1016	Resistor potentiometer	4,7 Kohm	$\frac{1}{2}$ W	Philips	2322 482 30472
R1017	Resistor potentiometer	4,7 Kohm	$\frac{1}{2}$ W	Philips	2322 482 30472
R1018	Resistor potentiometer	4,7 Kohm	$\frac{1}{2}$ W	Philips	2322 482 30472
R1019	Resistor potentiometer	4,7 Kohm	$\frac{1}{2}$ W	Philips	2322 482 30472

a Filament Stabilizer T1127

Symbol	Description	Manufact.	
R1101	Resistor 270 ohm 4,2W	Philips	2322 330 22271
R1102	Resistor 1Kohm 0,33W	Philips	2322 211 13102
R1103	Resistor 180 ohm 0,33W	Philips	2322 211 13181
R1104	Resistor 390 ohm 0,33W	Philips	2322 211 13391
R1105	Resistor potentiometer 4,7Kohm	A.B. Metal	Typ. HC10
R1106	Resistor 470Kohm 0,33W	Philips	2322 211 13471
C1101	Capacitor polyester 0,22uF 100V	Ero	MKT 1822-422/0
C1102	Capacitor electrolytic 22uF 40V	Siemens	B41283-B7226-T
D1101	Diode, zener 7,5V	Motorola	1N4737A
T1101	Transistor	Motorola	BD 241A
T1102	Transistor	Siemens	BC 141-10

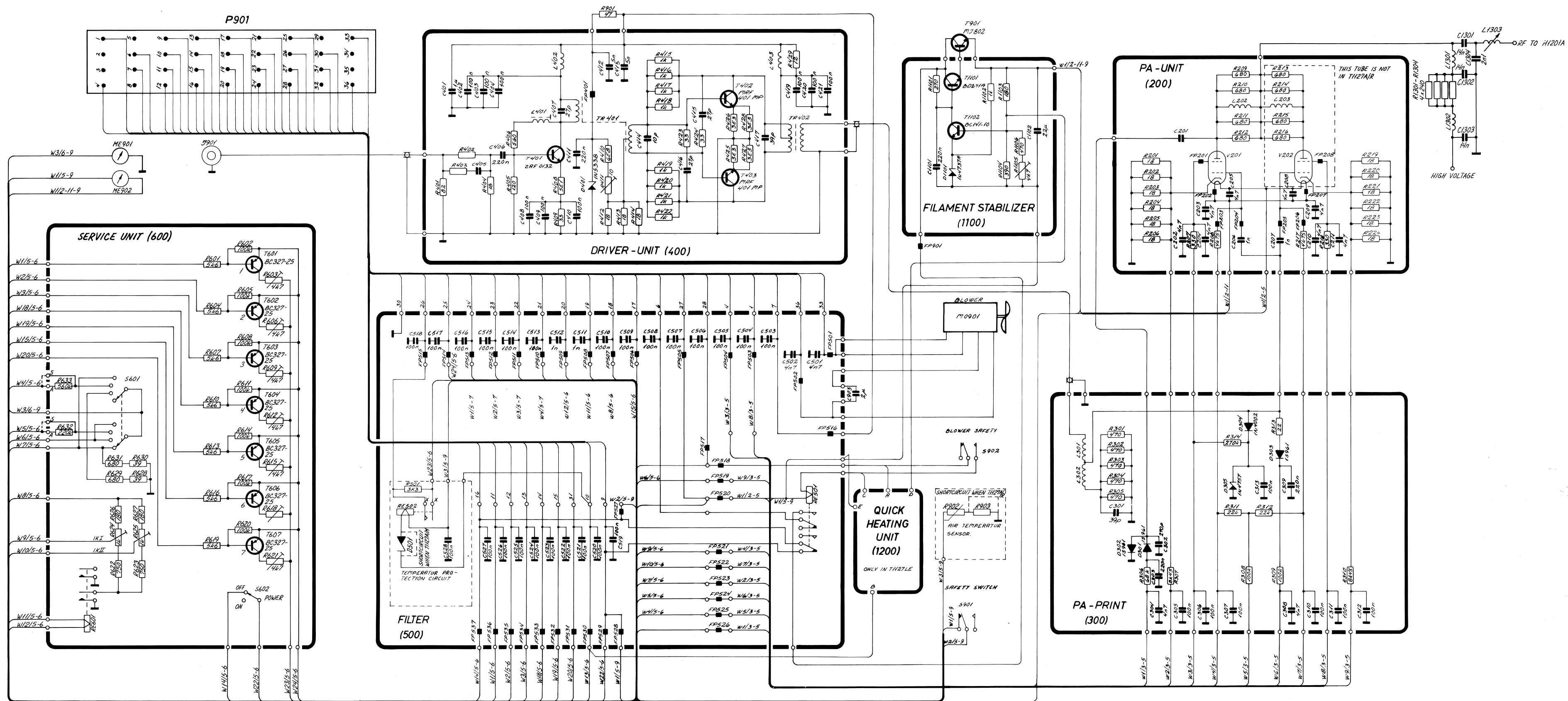
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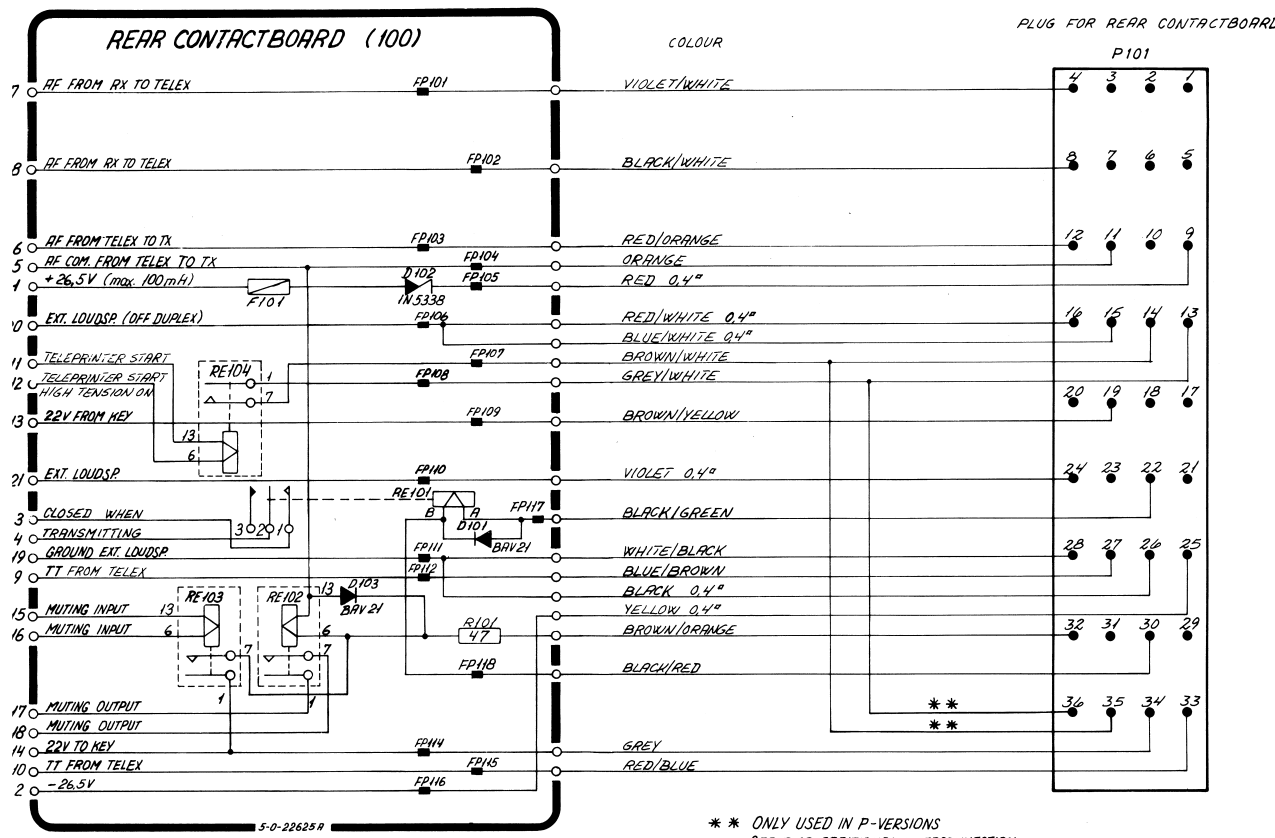
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C1201	Capacitor polyester	0.1uF	20%	100V	Philips	2222 344 24104
C1202	Capacitor polyester	0.1uF	20%	100V	Philips	2222 344 24104
C1203	Capacitor polyester	0.1uF	20%	100V	Philips	2222 344 24104
C1204	Capacitor polycarbonate	1nF	20%	630V	Ero	KC 1849/210/6
C1205	Capacitor polyester	0.1uF	20%	100V	Philips	2222 344 24104
C1206	Capacitor polyester	0.1uF	20%	100V	Philips	2222 344 24104
C1207	Capacitor polycarbonate	1nF	20%	630V	Ero	KC 1849/210/6
C1208	Capacitor polyester	0.1uF	20%	100V	Philips	2222 344 24104
C1209	Capacitor polyester	0.1uF	20%	100V	Philips	2222 344 24104
C1210	Capacitor polyester	0.1uF	20%	100V	Philips	2222 344 24104
C1211	Capacitor polyester	0.1uF	20%	100V	Philips	2222 344 24104
C1212	Capacitor polyester	0.1uF	20%	100V	Philips	2222 244 24104
C1213	Capacitor polyester	0.1uF	20%	100V	Philips	2222 344 24104
C1214	Capacitor polycarbonate	1nF	20%	630V	Ero	KC 1849/210/6
C1215	Capacitor polyester	0.1uF	20%	100V	Philips	2222 344 24104
C1216	Capacitor polycarbonate	1nF	20%	630V	Ero	KC 1849/210/6
C1217	Capacitor polyester	0.1uF	20%	100V	Philips	2222 344 24104
C1218	Capacitor polyester	0.1uF	20%	100V	Philips	2222 344 24104
C1219	Capacitor polyester	0.1uF	20%	100V	Philips	2222 344 24104
C1220	Capacitor polyester	0.1uF	20%	100V	Philips	2222 344 24104

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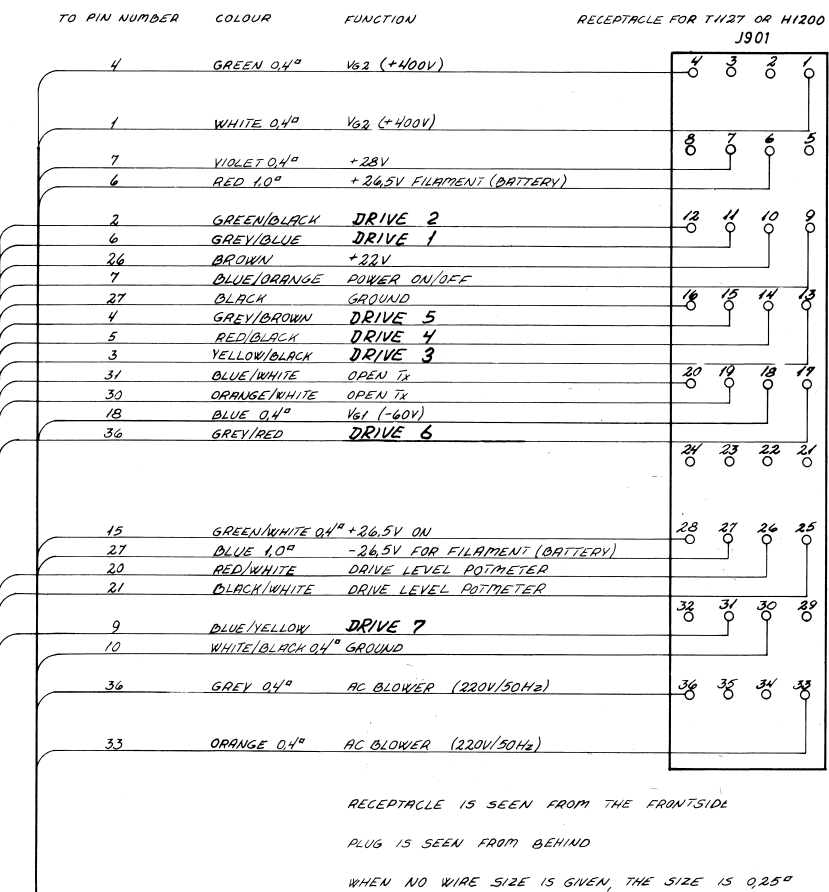
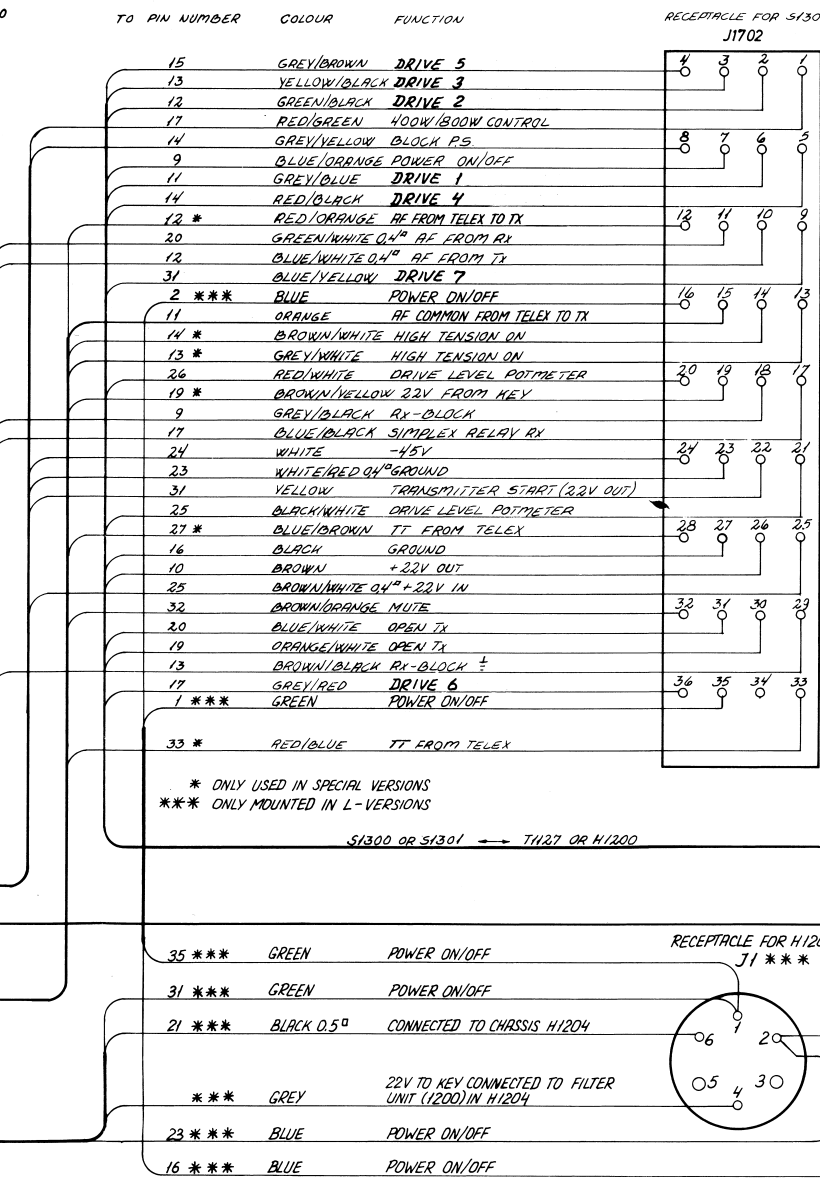
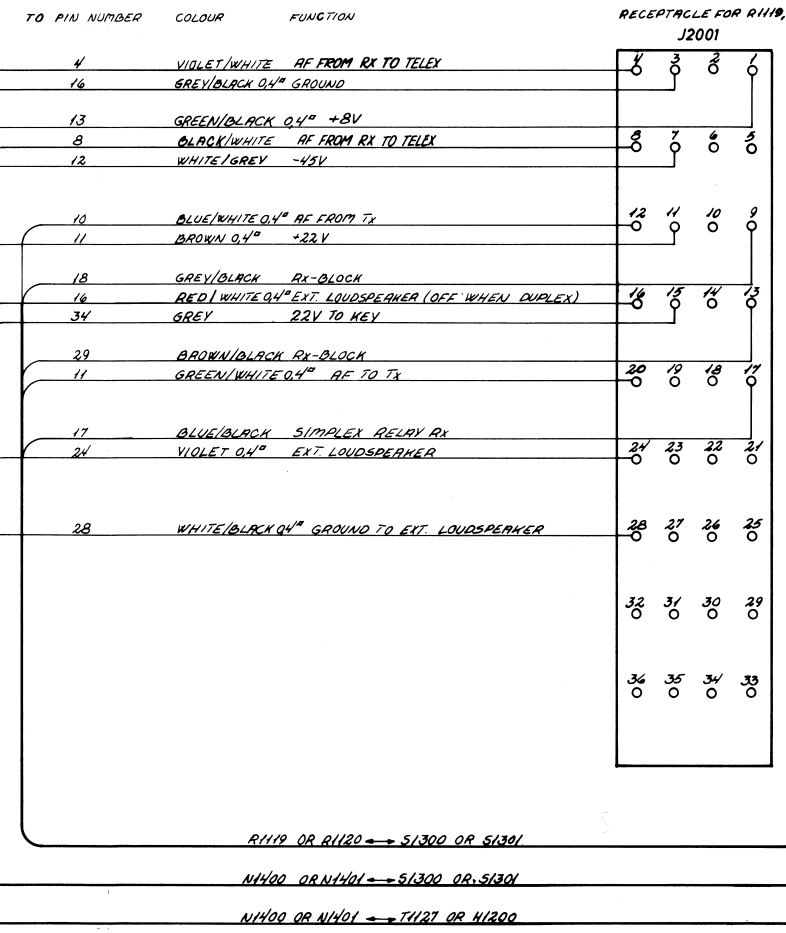
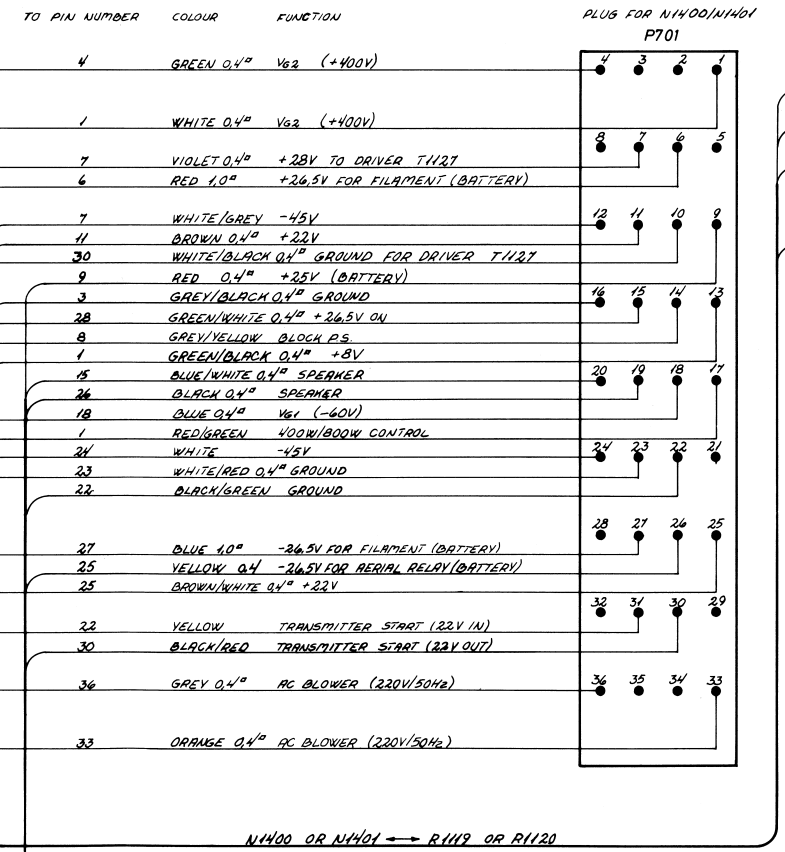
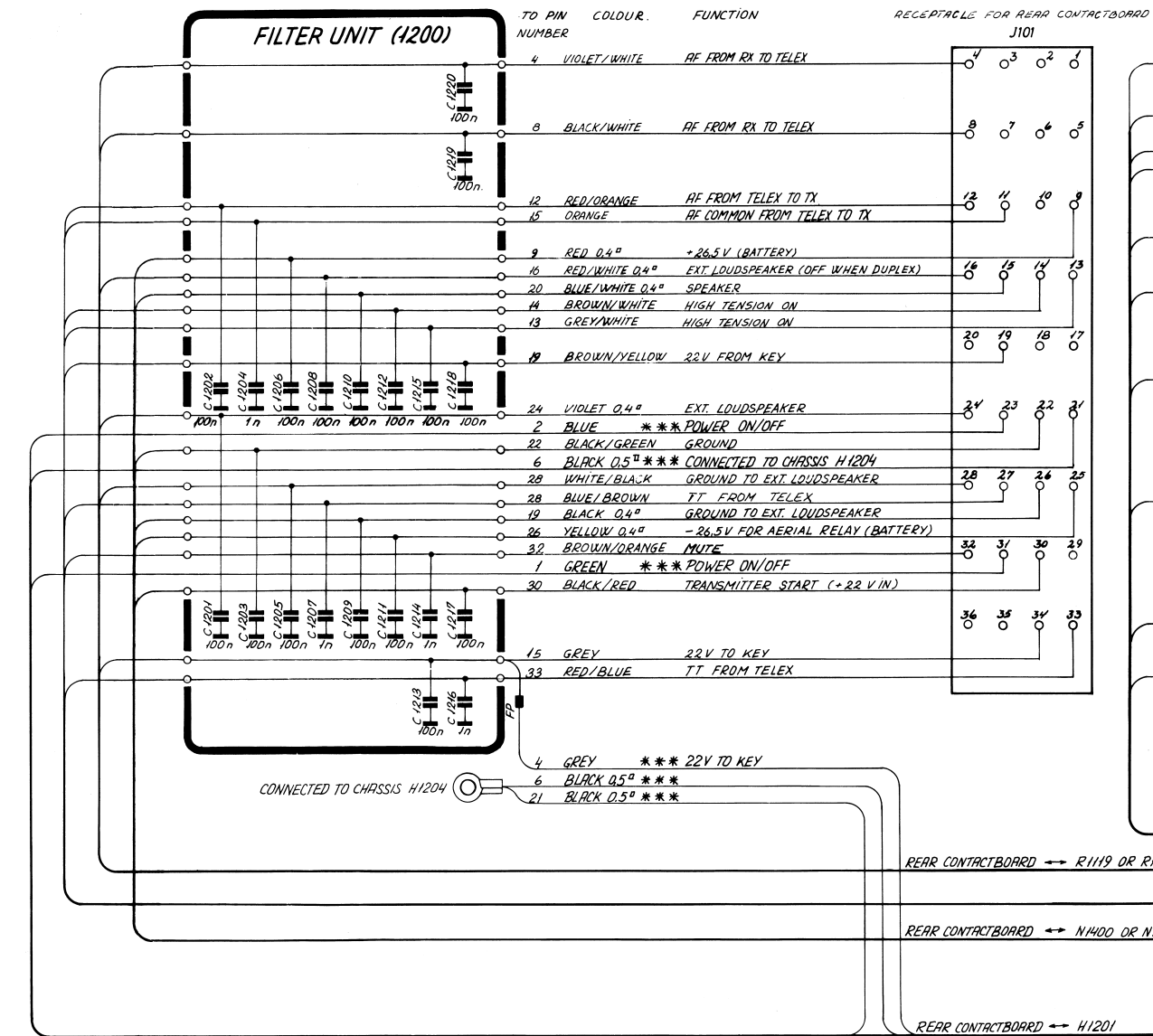
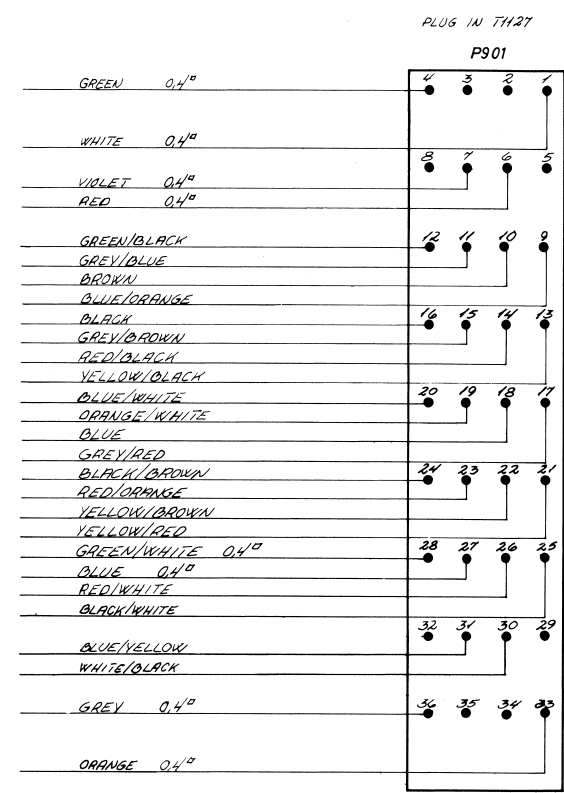
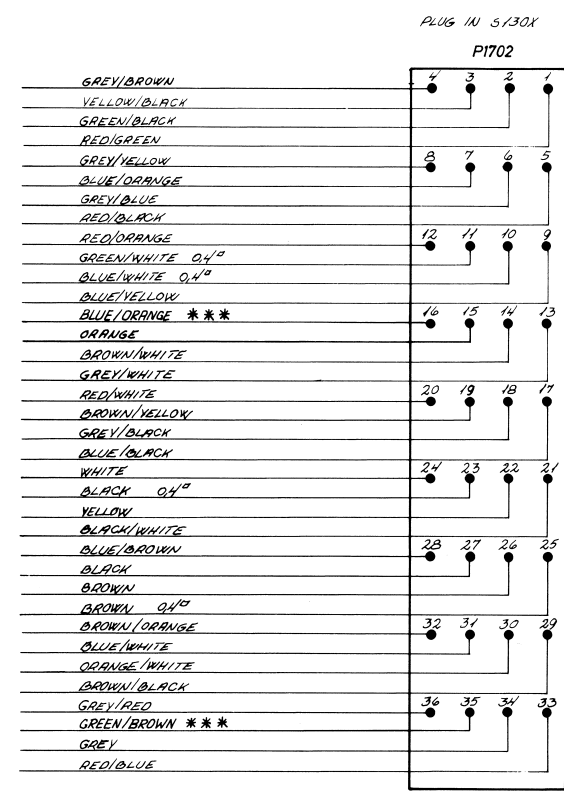
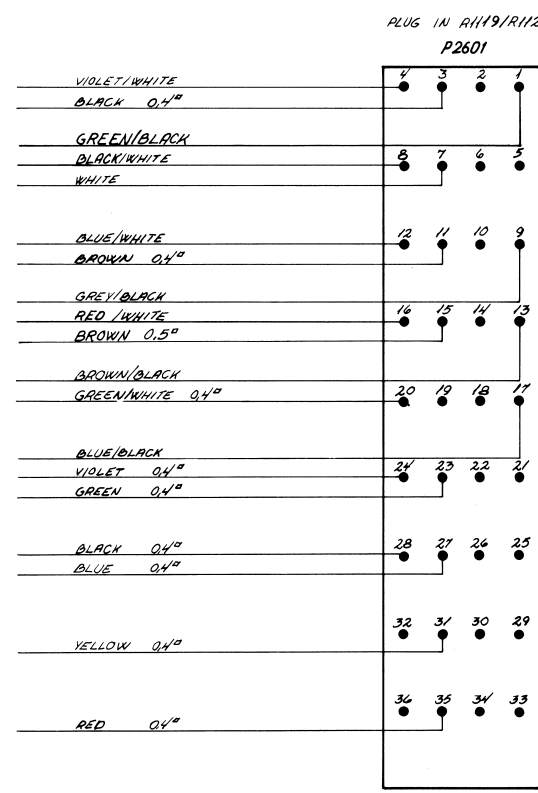
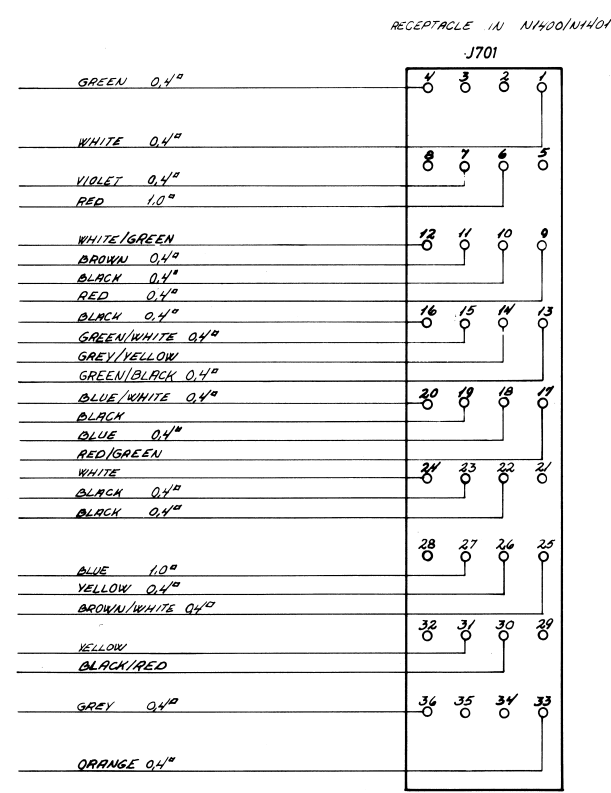
Symbol	Description	Manufact.	
D101	Diode, silicon	Philips	BAV 21
D102	Diode, zener 5,1V $\pm 5\%$	5W Motorola	1N5338
D103	Diode, silicon	Philips	BAV 21
R101	Resistor 47 ohm	0.33W Philips	2322 211 13479
RE101	Relay	Pasi	MS/K' BV863
RE102	Relay, reed	24V Clare	Preme 15003A
RE103	Relay, reed	24V Clare	Preme 15003A
RE104	Relay, reed	24V Clare	Preme 15003A
FP101	Ferroxcube beads	Kaschke	K3/1200/0.1Hz 4/2/7A
FP102	Ferroxcube beads	Kaschke	K3/1200/0.1Hz 4/2/7A
FP103	Ferroxcube beads	Kaschke	K3/1200/0.1Hz 4/2/7A
FP104	Ferroxcube beads	Kaschke	K3/1200/0.1Hz 4/2/7A
FP105	Ferroxcube beads	Kaschke	K3/1200/0.1Hz 4/2/7A
FP106	Ferroxcube beads	Kaschke	K3/1200/0.1Hz 4/2/7A
FP107	Ferroxcube beads	Kaschke	K3/1200/0.1Hz 4/2/7A
FP108	Ferroxcube beads	Kaschke	K3/1200/0.1Hz 4/2/7A
FP109	Ferroxcube beads	Kaschke	K3/1200/0.1Hz 4/2/7A
FP110	Ferroxcube beads	Kaschke	K3/1200/0.1Hz 4/2/7A
FP111	Ferroxcube beads	Kaschke	K3/1200/0.1Hz 4/2/7A
FP112	Ferroxcube beads	Kaschke	K3/1200/0.1Hz 4/2/7A
FP113	Ferroxcube beads	Kaschke	K3/1200/0.1Hz 4/2/7A
FP114	Ferroxcube beads	Kaschke	K3/1200/0.1Hz 4/2/7A
FP115	Ferroxcube beads	Kaschke	K3/1200/0.1Hz 4/2/7A
FP116	Ferroxcube beads	Kaschke	K3/1200/0.1Hz 4/2/7A
FP117	Ferroxcube beads	Kaschke	K3/1200/0.1Hz 4/2/7A
FP118	Ferroxcube beads	Kaschke	K3/1200/0.1Hz 4/2/7A
F101	Fuse 315mA time-lag Ø5x20mm	Elu	

- 1 V_{G2} (+400V)
- 2
- 3
- 4 V_{G2} (+400V)
- 5
- 6 +26.5V FILAMENT
- 7 +28V
- 8
- 9 BLOCK P.S.
- 10 +22V
- 11 DRIVE SELECT I
- 12 DRIVE SELECT II
- 13 DRIVE SELECT III
- 14 DRIVE SELECT IV
- 15 DRIVE SELECT V
- 16 GROUND
- 17 DRIVE SELECT VI
- 18 V_{G1} (-60V)
- 19 OPEN TX
- 20 OPEN TX
- 21 REMOTE CONTROL
- 22 REMOTE CONTROL
- 23 REMOTE CONTROL
- 24 REMOTE CONTROL
- 25 DRIVE LEVEL POTMETER
- 26 DRIVE LEVEL POTMETER
- 27 -26.5V FOR FILAMENT
- 28 +26.5V ON
- 29
- 30 GROUND
- 31 DRIVE SELECT VII
- 32
- 33 AC BLOWER (220V/50Hz)
- 34
- 35
- 36 AC BLOWER (220V/50Hz)





*** ONLY USED IN P-VERSIONS
SEE ALSO ADDITIONAL INTERCONNECTION
TABLE FOR P-VERSIONS.



INTERCONNECTION CABLE FOR SAILOR
SHORT-WAVE PROGRAM 1000
WITH S1300S, TH27S, TH27A1R, TH27A1M